D.P. VIPRA COLLEGE
BILASPUR
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6.3.2

Number of teachers provided with financial support to attend conferences/workshops/publications and towards membership fee of professional bodies during the year

D.P. Vipra College

Old High Court Road, Bilaspur

Chhattisgarh, India 495001

Summary-Sheet

Criteria	6 – Governance, Leadership and Management
Key Indicator	6.3 Faculty Empowerment Strategies
Metric	6.3.2: Number of teachers provided with financial support to attend conferences/workshops/publication and towards membership fee of professional bodies during the year
Number of teachers provided with financial support to attend conferences/ workshops/ publication and towards membership fee of professional bodies during the year	

Year	2023-24
No. of teachers provided with financial support to attend conferences /workshops/ publication and towards membership fee of professional bodies during the year	**40**

Note:
Since all supporting documents for this metric exceeds the upload limit of 5Mb, hence we have hosted the scanned documents as per SOP on institutional website on the following links.

Description	Relevant link
1) List of the teachers who have attended conferences/ workshops/ publication during the year along with mention of the financial support provided is attached. **(Appendix-I)**	https://dpvipracollege.ac.in/aqar-2023-24/
2) Policy document from institution for providing financial support to teachers is attached. **(Appendix-II)**	
3) Sample certificates of approval for providing financial support to teachers is attached. **(Appendix-III)**	
4) e-copies of letters indicating financial assistance/ vouchers as per above list are attached. **(Appendix-IV)**	

IQAC Co-ordinator
D.P. Vipra College
BILASPUR (C.G.)

PRINCIPAL
D.P. Vipra College
Bilaspur (C.G.)

IQAC Coordinator

Principal

D.P. VIPRA COLLEGE
BILASPUR
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2023-24

D.P. Vipra College

Old High Court Road, Bilaspur

Chhattisgarh, India 495001

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Appendix I

D.P. Vipra College

Old High Court Road, Bilaspur

Chhattisgarh, India 495001

OFFICE OF THE PRINCIPAL

D. P. VIPRA COLLEGE, BILASPUR (C.G.)

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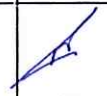
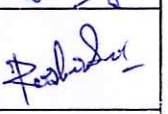
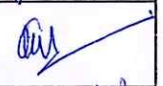
PHONE : 07752-424497, E-mail - dpvipracollege@gmail.com

6.3.2 Average percentage of teachers provided with financial support to attend conferences/workshop/Publication and towards membership fee of professional bodies during the year 2023-24

YEAR- 2023-24

Sr. No.	Year	Name of teacher	Name of conference/ workshop/Publication attended for which financial support provided	Name of the professional body for which membership fee is provided	Amount of support	Mode of Payment	Signature
1	2023-24	Dr. Anju Shukla	Abhinav Vikas Ke Lie Paryavaran Sanrakshan Kee Praasangikta	Samdarshi	2500.00	Cash	
2	2023-24	Dr. Bijoy Karmakar	India's Emerging Retail Trend- A Review	UGC Care Group 1 Listed Journal	2500.00	Cash	
3	2023-24	Dr. Richa Handa	Semantic Analysis of Twitter Data Using Natural Language Processing (NLP) Approach	Samdarshi	2500.00	Cash	
4	2023-24	Dr. S. K. Tiwari	Virtual & Feathery World of Tribal Folktales	Samdarshi	2500.00	Cash	
5	2023-24	Dr. Oorja Ranjan Sinha	Common and Contrasting Features of Verb Use in English and Hindi	Samdarshi	2500.00	Cash	
6	2023-24	Pradeep Kumar Jaiswal	Green Synthesis and the Formation Kinetics of Silver Nano Particles in Waste Water Villege Sonsari	Samdarshi	2500.00	Cash	

7	2023-24	Dr. Manish Tiwari	Green Synthesis and the Formation Kinetics of Silver Nano Particles in Waste Water Villege Sonsari	Samdarshi	2500.00	Cash	
8	2023-24	Dr. Renu Nayar	Importance of Knowledge Endocrine Disrupting Chemicals in Indian Wastewaters	Samdarshi	2500.00	Cash	
9	2023-24	Mr. Deepak Tiwari	Importance of Knowledge Endocrine Disrupting Chemicals in Indian Wastewaters	Samdarshi	2500.00	Cash	
10	2023-24	Dr. Shikha Pahare	Prevalence of Keratinophilic Fungi from Different Soil Samples in Bilaspur (Chhattisgarh)	Samdarshi	2500.00	Cash	
11	2023-24	Mr. Motilal Patle	Prevalence of Keratinophilic Fungi from Different Soil Samples in Bilaspur (Chhattisgarh)	Samdarshi	2500.00	Cash	
12	2023-24	Shriti Somvanshi	Acute Effect of Mercuric Chloride Exposure in the Freshwater Fish Gambusia Affinis	Samdarshi	2500.00	Cash	
13	2023-24	Dr. Shubhraja Pandey	A Review on Mushroom as less Explored Nutritional and Medicinal Source	Samdarshi	2500.00	Cash	
14	2023-24	Ms. Roshni Soni	A Review on Mushroom as less Explored Nutritional and Medicinal Source	Samdarshi	2500.00	Cash	
15	2023-24	Ms. Prashansa Yadav	A Review on Mushroom as less Explored Nutritional and Medicinal Source	Samdarshi	2500.00	Cash	
16	2023-24	Dr. Sunita Yadav	Third Gender Rights Past and Present	Samdarshi	2500.00	Cash	
17	2023-24	Dr. Ashish Sharma	Feminist Writing	Samdarshi	2500.00	Cash	
18	2023-24	Dr. Toshima Mishra	Study of Abo and Rh-D Blood group among the Students of D. P. Vipra College, Bilaspur (C.G.)	Samdarshi	2500.00	Cash	

19	2023-24	Smt. Prachi Tiwari	Study of Abo and Rh-D Blood group among the Students of D. P. Vipra College, Bilaspur (C.G.)	Samdarshi	2500.00	Cash	
20	2023-24	Mr. Deepak Kashyap	Study of Abo and Rh-D Blood group among the Students of D. P. Vipra College, Bilaspur (C.G.)	Samdarshi	2500.00	Cash	
21	2023-24	Dr. Vivek Ambalkar	A Point Electric Dipole: From Basic Optical Properties to the Fluctuation-Dissipation Theorem	Samdarshi	2500.00	Cash	
22	2023-24	Mr. Bhagwat Kaushik	A Point Electric Dipole: From Basic Optical Properties to the Fluctuation-Dissipation Theorem	Samdarshi	2500.00	Cash	
23	2023-24	Smt. Jyoti Tiwari	Pracheen Bhaarateey Gyan Parampara Kee Amooly Thaatee Aayurved: Mooly Evam Mahatta	Samdarshi	2500.00	Cash	
24	2023-24	Mr. Gendlal Banjare	Maroosthaleey Paristhitik Tantr	Samdarshi	2500.00	Cash	
25	2023-24	Ms. Deeksha Dewangan	Maroosthaleey Paristhitik Tantr	Samdarshi	2500.00	Cash	
26	2023-24	Dr. Sushma Sharma	Saahity Aur Patrakaarita Ka Antarsambandh	Samdarshi	2500.00	Cash	
27	2023-24	Dr. M.S. Tamboli	Bhaarat Cheen Sambandh: COVID-19 Ke Vishesh Sandarbh Mein	Samdarshi	2500.00	Cash	
28	2023-24	Dr. Abha Tiwari	Bhaarat Cheen Sambandh: COVID-19 Ke Vishesh Sandarbh Mein	Samdarshi	2500.00	Cash	
29	2023-24	Mrs. Kiran Dubey	Bhaarat Cheen Sambandh: COVID-19 Ke Vishesh Sandarbh Mein	Samdarshi	2500.00	Cash	
30	2023-24	Mr. Rupendra Sharma	Bhaarat Cheen Sambandh: COVID-19 Ke Vishesh Sandarbh Mein	Samdarshi	2500.00	Cash	

31	2023-24	Dr. Sadhana Som	Baal Aparadhah: Ek Samajshaastreey Adhyayan	Samdarshi	2500.00	Cash	
32	2023-24	Mr. Yupesh Kumar	Svatantrata Aandolan Mein Janajaatiyon Kee Bhoomika	Samdarshi	2500.00	Cash	
33	2023-24	Dr. Smriti Rani Prakash	Svatantrata Aandolan Mein Janajaatiyon Kee Bhoomika	Samdarshi	2500.00	Cash	
34	2023-24	Mr. Sagram Chandravansh	Svatantrata Aandolan Mein Janajaatiyon Kee Bhoomika	Samdarshi	2500.00	Cash	
35	2023-24	Ms. Savita Vishwakarma	(National Conference)"Holistic Development in Indian Tradition: Perspectives from the Social Sciences"	Atal Bihari Vajpayee University, Bilaspur (C.G.)	2500.00	Cash	
36	2023-24	Ms. Anju Kamlesh	(National Seminar) "Bhartiya Samaj Me Mahila Utpidan : Ek Samajshastriya Adhyayan"	D.P. Vipra College, Bilaspur (C.G.)	2500.00	Cash	
37	2023-24	Ms. Kanchi Bajpai	(National Conference) : Viksit Bharat@2047: Relevancy of Research, Indian Language & Bhartiya Gyan Parampara	Dr. C.V. Raman University, Kota, Bilaspur(C.G)	2500.00	Cash	
38	2023-24	Mr. Sushil Patel	Feminist Writing	Samdarshi	2500.00	Cash	
39	2023-24	Ms. Deepali Kushwaha	A Review on Mushroom as less Explored Nutritional and Medicinal Source	Samdarshi	2500.00	Cash	
40	2023-24	Mrs. Anjali Jaiswal	(National Seminar)"Bhartiya Samaj Me Mahila Utpidan: Ek Samajshastriy Adhyayan	D.P. Vipra College, Bilaspur (C.G.)	2500.00	Cash	

PRINCIPAL
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Appendix II

D.P. Vipra College

Old High Court Road, Bilaspur

Chhattisgarh, India 495001

OFFICE OF THE PRINCIPAL
D. P. VIPRA COLLEGE, BILASPUR (C.G.)
Accredited "A" by NAAC, ISO-9001:2015 Certified
Phone No.- 07752-424497, Web. – *www.dpvipracollege.in*, Email- *dpvipracollege@gmail.com*

Date: 11/08/2023

Policy of Financial Support to the Teachers for attending Conference, Workshop, Publication and membership of professional body

The Institute provides financial support for attending conferences and workshops towards registration fees and travelling expenses with Duty Leave facility.

1. Further it was decided to support in following manner:

- If publication is at State Level, Amount of 2000/- Rupees will be given as financial support.
- If publication is at National Level, Amount of 2500/- Rupees will be given as financial support.
- If publication is at International Level, Amount of 3000/- Rupees will be given as financial support.

2. The Institute gives 25% assistance in taking membership of professional body.

3. One faculty can avail financial assistance only one time during academic year.

Principal
D. P. Vipra College,
Bilaspur (C.G.)

PRINCIPAL
D.P. VIPRA COLLEGE
BILASPUR (C.G.)

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Phone No.- 07752-424497, Web. – *www.dpvipracollege.in*, Email- *dpvipracollege@gmail.com*

Date: 11/08/2023

Policy of Incentives to the Teachers for State, National and International Recognition/Awards

It is the express intent and policy of the institute to provide conducive environment for fostering creativity, innovation, novel ideas and-out-of-box thinking from faculty for making a permanent impression in society and making a name for the college.

To promote faculty development and to encourage retention of faculty in the college, the institution provides various incentives to teachers who receive state, national and international recognition/awards, as follows:

- State level- Appreciation letter from the institute and ₹ 2001/- cash prize.
- National level- Appreciation letter from the institute and ₹ 2501/- cash prize.
- International level- Appreciation letter from the institute and ₹ 3001/- cash prize.

Principal
D. P. Vipra College,
Bilaspur (C.G.)

PRINCIPAL
D.P. VIPRA COLLEGE
BILASPUR (C.G.)

VOUCHER

D.P. VIPRA COLLEGE

BILASPUR (C.G.)

No. _____

Debit _____ C.B.F. _____

Credit _____ Date _____

Particulars	Amount Rs.	P.
Paid to _____		
By Cash / Cheque / D.D. No. _____		
Dated _____ Towards _____		
TOTAL		

CANCELLED

Rupees In Words _____

Approved

Manager/Accountant

Signature of Receiver

D.P. VIPRA COLLEGE
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Appendix III

D.P. Vipra College

Old High Court Road, Bilaspur

Chhattisgarh, India 495001

Samdarshi
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Abhinav Vikaas Ke Lie Paryaavaran Sanrakshan Kee Praasangikata

(अभिनव विकास के लिए पर्यावरण संरक्षण की प्रासंगिकता)

डॉ. (श्रीमती) अंजू

यजुर्वेद में पर्यावरण को शांत रखने के लिए ऋषि प्रार्थना करते हैं। ॐ द्यौः शान्तिरन्तरिक्षँ शान्तिः,पृथ्वी शान्तिरापः शान्तिरोषधयः शान्तिः। वनस्पतयः शान्तिर्विश्वे देवाः शान्तिर्ब्रह्म शान्तिः,सर्वं शान्तिः, शान्तिरेव शान्तिः, सा मा शान्तिरेधि।। ॐ शान्तिः शान्तिः शान्तिः ।। यदि हम आज वर्तमान परिस्थिति पर दृष्टिपात करें तब अनुभव होता है कि हमारे चारों तरफ प्रकृति तत्वों में अशांति छाया हुआ है। प्रकृति पीड़ित है, क्रोधित है, क्षुब्ध है। परिणाम के रुप प्राकृतिक प्रकोप का सामना समस्त जीव जगत को भोगना पड़ रहा है। जैसे लातूर से लगे किल्लारी का भूकम्प, केदारनाथ का प्रलय पूर्ण जल प्रवाह, सुनामी लहरों से हिन्द महासागर के द्विपीय देश से दक्षिण भारत की तबाही, जोशी मठ में पड़ता हुआ दरार, जल भराव, अतिवृष्टि, अनावृष्टि, महामारी जैसी घटनाएँ पर्यावरणीय असंतुलन की गवाही दे रही हैं।

आज संपूर्ण जगत सामाजिक और आर्थिक विकास के लक्ष्य को ध्यान में रखकर विकास की संकल्पना गढ़ रहा है। परन्तु कोरोना महामारी ने इस बात को सशक्त रूप से साबित कर दिया है कि सतत् विकास के लिए सामाजिक एवं आर्थिक विकास या कोई भी भौतिक विकास को हमें पर्यावरण संरक्षण से जोड़कर देखना होगा। मानवीय विकास के लिए हम प्रकृतितत्व की सुरक्षा को अनदेखा नहीं कर सकते। कोविड-19 के समय विश्व की हालत क्या थी, सभी ने देखा दिसम्बर 2019 में चीन के वुहान शहर से निकला हुआ कोरोना वायरस देखते-देखते विश्व पटल में छाया गया और कोविड की प्रथम लहर द्वितीय लहर जैसी घटनाओं ने दुनियाँ में त्राहि-त्राहि मचा दी। लाखों लोग कालकवलित हो गये। संपूर्ण मेडिकल सांईस कोरोना के सामने बेबस और लाचार था। समाज की स्वास्थ्य सेवाएँ तो चौपट हुई, संपूर्ण अर्थ व्यवस्था, समाज व्यवस्था पर गहरा असर पड़ा। विश्व के वैज्ञानिक इसके कारण, परिणाम की समीक्षा करने के साथ सतत् विकास के लिए पर्यावरणीय योगदान पर विचार करने लगे। कोरोना महामारी के बाद सतत् विकास की प्रक्रियाँ के साथ-साथ विकास की संभावनाएँ नये ढंग से परिभाषित की जाने लगी, जिसका परिणाम कोरोना महामारी के परिणाम के रुप एक नया विकास संकल्पना को जन्म दिया जिसने "अभिनव विकासवाद" कहाँ जाने लगा।

अभिनव विकासवाद की संकल्पना हमारी भौतिक आवश्यकता, रोटी, कपड़ा, मकान, स्वास्थ्य, शिक्षा, सफाई की उन्नित के साथ पर्यावरण संरक्षण को सर्वोच्च प्राथमिकता देते हुए निर्धारित की जा रही है।

बढ़ता हुआ उपभोक्तावाद, आधुनिक आद्यौगिकरण, मशीनीकरण, नगरीकरण, बाजारीकरण, भौतिक भोग लिप्ता, अंधाधुंध प्रकृति का दोहन, शोषण, स्वार्थ लिप्सा, भ्रष्टाचार, मुनाफाखोरी, मुफ्तखोरी के कारण, साथ ही उत्तर आधुनिकवाद ने हमारी प्राकृतिक व्यवस्था अर्थात् पर्यावरण "पारिस्थितिकी तंत्र" विनाश के कगार पर खड़ा हैं। समय रहते यदि नहीं चेते तो विनाश अवश्यम्भावी है।

आज हमें अपने पर्यावरण संरक्षण के प्रति हमारी सोच, आचरण और दृष्टिकोण में परिवर्तन अनिवार्य है। हमें संवेदनशील होकर, सकारात्मक होकर विचार करना होगा। हमें हमारी धार्मिक, भौतिक जिम्मेदारी और दृढ़ राजनीतिक इच्छाशक्ति से पर्यावरण विकास को सुनिश्चित करते हुए, आकाश, वायु, अग्नि, जल, पृथ्वी के साथ-साथ जैव विविधता को अक्षुण्ण रखना होगा। सतत् विकास के द्वारा पर्यावरण संरक्षण को समझने के संत जम्मोदास की चिन्तन को उल्लेख करना चाहूँगीं। संत जम्मोदास ने तात्कालीन समाज में व्याप्त कुरीतियों, बुराईयों एवं अज्ञानता को मिटाने के एक अभिनव दिशा प्रदान की। सन् 1485 में बिश्नोई संप्रदाय की स्थापना की। 29 नियमों में जीव जन्तुओं के प्रति दया एवं पोषण तथा हरे वृक्षों को नहीं काटना उनके कुछ प्रमुख लक्ष्य थे।

"जीव दया पालणी, रूख लीली नई" यह विचार पर्यावरण संरक्षण की अभिव्यक्त विकास अवधारणा का आधार बन सकता है। इसी प्रकार 1987 में प्रख्यात् पर्यावरण विद् बटलैण्ड ने धारणीय विकास, संवेदनीय विकास, टिकाऊ विकास की अवधारणा स्पष्ट की। टिकाऊ विकास वह विकास है, जिसमें वर्तमान पीढ़ी अपनी आवश्यकताओं की पूर्ति आने वाली पीढ़ी की आवश्यकताओं को बिना क्षति पंहुचाएँ करती है।

भारतीय संस्कृति को आरण्यक संस्कृति कहा जाता था। ज्ञानी, विज्ञानी, ऋषि, मुनि समाज कल्याण के लिए चिंतन-मनन करने हेतु वन में निवास करते थे। पहाड़ों, झरनों, नदियों को देव स्वरुप मानकर उनकी पवित्रता को बनाये रखने के लिए स्तुति, आराधना के साथ उपयोग करते थे। पहाड़ों को देव, नदियाँ पूज्य यात्रा का दर्जा प्राप्त हैं। स्नान करते समय हम आज भी आव्हान करते है - " अयोध्या, मथुरा, माया, काशी, कांची, अवन्तिकापुरी, द्वारवती ज्ञेयाः सप्तैता मोक्ष दायिका।। गंगे च यमुने चैव गोदावरी सरस्वती, नर्मदा सिंधु कावेरी जलेस्मिनेसंनिधि कुरू।। " आगछन्तु पवित्राणि, स्नाने काले सदामयु, अयोध्या, माया, मथुरा, काशी कांची, अवन्तिका पुरी, द्वारावती, सर्व मोक्ष दायिका, हरिद्वारे, कुशावर्ते, विल्केव नील पर्वते, स्नात्व कलखले तीर्थ, पुर्नजन्म ना विघ्मये, गङगा गङगेति यो ब्रूयाद् योजनानां शतैरपि। मुच्यते सर्वपापेभ्यो विष्णुलोकं स गच्छति

01- जे. रोज "सोसियोलॉजी एण्ड सोशल प्राब्लम।"

02- पी. जिस्बर्ट "फाउन्डेशन ऑफ सोशियोलॉजी।"

03- एम.बालकृष्णन "इनवायरमेंट प्राब्लम एवं प्रास्पेक्ट्स इन इंडिया।"

04- सुंदरलाल बहुगुणा "धरती की पुकार" आदि लेखों में पर्यावरण संबंधी समस्याओं का उल्लेख मिलता है।

05- भारत डोगरा, पेय जल समस्या।

06- कैलाशचन्द्र, पानी का समाजशास्त्र।

07- जितेन्द्र गुप्त, जल संचय से आती है हरियाली।

08- डॉ. जयन्तीलाल भण्डारी, पेयजल एक आधारभूत आवश्यकता।

09- जलसंकट एक गंभीर चुनौती, डॉ.रविशंकर जमुआर

आदि लेखों में जल संबंधी समस्याओं का उल्लेख मिलता है। केन्द्र तथा राज्य सरकारों द्वारा इस समय भारत में जल संसाधनों के प्रति कतिपय प्रयास किये जा रहे हैं। जैसे-केन्द्र-सरकार ने जल संसाधनों के विकास हेतु तीन संस्थाओं का गठन किया है।

01- केन्द्रीय जल आयोग 1945

02- केन्द्रीय भूमिगत जल बोर्ड 1952 एवं 1972

03- राष्ट्रीय जल विकास एजेन्सी 1982

इसके अतिरिक्त राष्ट्रीय जल नीति निर्माण के लिए 30 अक्टूबर 1985 से 1987 तक एक राष्ट्रीय जल संसाधन परिषद का गठन किया गया। जल संरक्षण के लिये विभिन्न अधिनियम पारित किये गये। जैसे -

1- जल प्रदूषण निवारण एवं नियंत्रण अधिनियम 1981

2- वन संरक्षण अधिनियम 1980

3- केन्द्रीय प्रदूषण बोर्ड, वायु एवं जल प्रदूषण को रोकने वाली प्रमुख संस्था है।

4- केन्द्रीय गंगा प्राधिकरण 1985

5- यमुना कार्य योजना 1993

6- राष्ट्रीय नदी संरक्षण योजना 1995

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7- राष्ट्रीय वृक्षारोपण और परिस्थितिकीय विकास बोर्ड (राजीव पर्यावरण योजना)

इसके अतिरिक्त पर्यावरण बचाव आन्दोलन में टिहरी बांध आन्दोलन (सुंदरलाल बहुगुणा), नर्मदा बचाव आन्दोलन (सुश्री मेधा पाटेकर) आदि कार्य कर रहे हैं।

स्टॉकहोम में 1972 में रियोडिजेनेरियो में 1992 में पर्यावरण संबंधी अधिवेशन हुए। भारत में विभिन्न प्रकार की संस्थाऐं पर्यावरण पर अध्ययन कर रही हैं जैसे 01. पर्यावरण शिक्षा केन्द्र अहमदाबाद (नेहरु विकास फाउण्डेशन अहमदाबाद से संबंध) 02. सी.पी.आर. पर्यावरण केन्द्र मद्रास (सर सी.वी. रामास्वामी अय्यर फाउण्डेशन मद्रास से संबंध) 03. पारिस्थकीय विज्ञान केन्द्र (भारतीय विज्ञान संस्थान बैंगलोर से संबंध) 04. खनन पर्यावरण केन्द्र (इंडियन स्कूल ऑफ साइन्स धनबाद से संबंध) 05. सलीम अली पक्षी विज्ञान तथा प्राकृतिक विज्ञान केन्द्र कोम्यब्टूर (मुम्बई प्राकृतिक विज्ञान समिति मंुम्बई से संबंध) आदि के द्वारा पर्यावरण संरक्षण के लिए कार्य किये जा रहे हैं।

केन्द्र तथा राज्य सरकारों द्वारा इस समय भारत में पर्यावरण संरक्षण लिए विभिन्न प्रकार के कानून लागू हैं। जैसे- 01 वन्य जीवन संरक्षण अधिनियम 1972। 02. वन संरक्षण अधिनियम 1980। 03. जल प्रदूषण निवारण एवं नियंत्रण अधिनियम 1974। 04. वायु प्रदूषण निवारण एवं नियंत्रण अधिनियम 1989। 05. पर्यावरण संरक्षण अधिनियम 1986। 06. मोटर वाहन (संशोधित) अधिनियम 1988। 07. राष्ट्रीय पर्यावरण सिगनल अधिनियम 1995 आदि के द्वारा पर्यावरण संबंधी प्रदूषण की रोकथाम के लिए कड़े प्रयास किये जा रहे हैं। 08. केन्द्रीय प्रदूषण नियंत्रण बोर्ड वायु और जल प्रदूषण को रोकने वाली महत्वपूर्ण संस्था है। 09. केन्द्रीय गंगा प्राधिकरण 1985। 10. राष्ट्रीय वृक्षारोपण और पारिस्थितिकीय विकास बोर्ड।

सन् 2014 में प्रधानमंत्री सम्मानीय नरेन्द्र मोदीजी के द्वारा पर्यावरण संरक्षण के लिए सतत् प्रयास किया जा रहा है। "नमामि गंगे" के नाम से गंगा की सफाई, स्वच्छ भारत, स्वथ्य भारत, प्लास्टिक रहित भारत, एक भारत श्रेष्ठ भारत आदि कार्यक्रम जल बचाओं, हावेस्ंिटग सिस्टम आदि कार्यक्रम पर्यावरण के संरक्षण के लिए कार्यरत् है। इसी प्रकार छत्तीसगढ़ के सम्मानीय मुख्यमंत्री श्री भूपेश बघेल के नेतृत्व में "नरवा, गरूवा, घुरूवा बारी" परियोजना संचालित किये जा रहे है। इस प्रकार का प्रयास वास्तव में पर्यावरण संरक्षण के लिए भगीरथ प्रयास साबित होगा।

पारिस्थितिकी तंत्र की संकल्पना की गई, पुरातन काल से ही भारतीय मनीषियों ने प्रकृति एवं जीव तथा वनस्पतियों के अर्न्तसंबंधों को समझा, प्रतीकात्मक रूप से उन्हें आध्यात्म से जोड़ा जिसके कारण पारिस्थितिकी तंत्र हजारो लाखो वर्ष से अपने रूप में अवाधगति से चलते रहा। "पारिस्थितिकी शब्द का प्रयोग सर्वप्रथम अर्नेस्ट हैकल ने 1869 में किया। हम्बोल्ट ने 1769 में बताया कि पृथ्वी जल पदार्थ नहीं है। काले रिटर ने 1779-1859 में लिखा है कि, पृथ्वी धरातल पर विभिन्न तत्वों के स्थानीय वितरण में सामांजस्य होता है। 1935 में टांसले ने परिभाषित किया कि, "वह तंत्र जिसमे पर्यावरण के जैविक और अजैविक कारक अन्तः संबंधित होते है, पारिस्थितिकी तंत्र कहलाता है।

आज पुनः पर्यावरण संरक्षण के लिए हमें संकल्पित होना होगा। विकास के द्वारा आगे बढ़ना होगा केवल जल को प्रदूषित करने से हमें अनकों बीमारियाँ जैसे सिरदर्द, रक्तचाप, पाण्डुरोग, आमवात, अर्धांग वायु, चर्बी बढ़ना, संधिवात्, सर्दी-जुकाम, खांसी, काली खांसी, यकृत, प्लीहा के रोग, गैस, अम्लपित, अल्सर, मलावसेध, अन्न नलिका में सूजन, गुदा बाहर आना, बवासीर, मधुमेह, अमातिसार, टी.बी., ऑख की बीमारी, कान की बीमारी, गले के विकार, गर्भाशय का कैंसर, गले का विकार, मंद प्रवर आदि। वायु हमारे लिए जीवन शक्ति है, एक मिनट भी हम आक्सीजन के बिना जीवित नही रह सकते। छाती, फेफड़ा, स्वांसनलिका आदि बीमार हो तब पंचप्राण, उदान, प्राण, समान, अपात, व्यान कुपित हो जाते है।

आज जो हमारी पर्यावरण को नुकसान हो रहा है, उसका सबसे बड़ा कारण हमारी स्वार्थपूर्ण मानसिकता, भोगवादी प्रवृत्ति, कुरीति और अज्ञानता है। हमारी इसी मानसिकता और बिखरा हुआ पर्यावरण को देखकर दुःखी होकर वालफसान ने लिखा है - "आगे देखिए और कल्पना कीजिए कि हम किस प्रकार का विश्व चाहतें हैं। ठीक अभी नहीं लेकिन अपने बच्चों के लिए क्या हम अपनी पैतृक सम्पत्ति एक निर्धनतम, संसाधन विहीन विश्व के रूप में छोड़ रहे हैं, जहाँ बहुत सारे लोग भूखे हैं, एक अनिश्चित जलवायु हैं, कम वन कमजोर जैव विविधता है और समाज उससे कही अधिक अस्थिर हैं।

पर्यावरण का बिगड़ता असंतुलन, बढ़ते प्रदूषण के लिए संपूर्ण विश्व चिंतित है। पर्यावरण बचाने के लिए अनकों कार्य हुए हैं, अनेको लेख लिखे गए हैं।

आज हमें प्रकृति की ओर लौटो का नारा देना होगा। हमारे पूर्वजों को पर्यावरण का महत्व भलीभांति ज्ञात था, तभी तो उन्होंने नदियों को गंगा, यमुना, सरस्वती, गोदावरी, कावेरी, ब्रम्हपुत्र जैसे सभी नदियों को माता कहके पुकारा गया है। गाय को माता कहा गया, गाय को माता से सम्बोधित किया। श्रीमद् भागवत में कथा आती है जब बेन राजा के पाप से धरती बंजर हो गई तब स्वयं परमात्मा ने धरती में पृथु रूप में जन्म लेकर अपनी पत्नी अर्ची के साथ पृथ्वी का दोहन किया और धन-धान्य वनस्पति से पृथ्वी को पुनः पल्लिवत पुष्पित किये। वृक्षों को देव रूप में देखा गया है। गीता में भगवान कृष्ण ने स्वयं अश्वत्थः वृक्षाणाम् कहा। पीपल में विष्णु, बरगद में शिव, आम में कामदेव, पारिजात में हनुमान जी, नीम में शीतला माता, शमी में शनिदेव, केला में बृहस्पति, आंक में गणेश जी, देवी तुलसी माता के स्तुति में "वृन्दा, वृन्दावन्नी, विश्व पूजा, विश्व पावनी, पुष्पांआरा, नन्दिनी, तुलसी च कृष्णजीवनी किया गया है।

पृथ्वी की रक्षा के लिए 33 प्रतिशत भाग में वनाच्छादित जरूरी है। वन्य जीवो के कारण वन संरक्षित रहता है। पशु पक्षियों को भी देव रूप मानकर पूजा गया। हाथी गणेश जी के रूप में, वानर हनुमान जी के रूप में, गरूड़ विष्णु का वाहन, कौआ शनि का वाहन, श्वान राहु का वाहन, बैल शिव का वाहन, शेर दुर्गा का वाहन, हंस ब्रम्हा जी का वाहन, मयूर भगवान कार्तिक का वाहन, घोड़ा सूर्य भगवान का, भैंसा यमराज के रूप में पूजनीय है।

जब से मानव ने बढ़ती जनसंख्या के भरण-पोषण के लिये कृषि हेतु जंगलों का कटाव प्रारंभ किया, तभी से पर्यावरण-प्रदूषण की समस्या का प्रारंभ हुआ। जंगल काटने से पृथ्वी नग्न हो गई, जिसके अनेक दुष्परिणाम हुए। वर्षा की बूंदें पहले वृक्षों पर गिरती थी एवं वृक्षों के पत्तों, टहनियों और तने के सहारे धीरे-धीरे पृथ्वी पर जल के रूप में उतरती थीं, ऐसी स्थिति में पृथ्वी की उपजाऊ मिट्टी का कटाव नहीं होता था, परन्तु वन कर्तन हो जाने से वर्षा की बूंदें सीधे पृथ्वी पर गिरने लगीं, जिससे भूमि की ऊपरी उपजाऊ मिट्टी भी कटकर जल के साथ बह गई। वृक्षों की जड़े वर्षा जल को सोखती थीं, वह कार्य रुक गया, जिससे भूमिगत जल में कमी आई तथा पीने एवं सिंचाई योग्य भूमिगत जल कम होता गया। वृक्षों की जड़े भी मिट्टी को बांधकर रखती थीं, वह पकड़ ढीली होने से मृदाक्षरण एवं अपरदन होने लगा। यही कटी हुई मृदा वर्षा जल के साथ बहकर नदियों में पहुंचने लगी तथा नदियों की तलहटी में भरने लगी, जिससे नदियों की गहराई कम होने लगी, जिससे नदियों के जल ढोने की क्षमता कम हो गई तथा नदियों का पेटा मृदा (मिट्टी) से भर जाने के कारण बाढ़ की समस्या भी उत्पन्न होने लगी। उधर कृषि योग्य उपजाऊ मिट्टी अपरदन से कट जाने के फलस्वरूप मिट्टी की उपजाऊ क्षमता में भी कमी आई, फलतः मनुष्य ने उत्पादकता बढ़ाने के लिए पर्यावरण के लिये घातक रासायनिक खादों का प्रयोग कर मिट्टी की उपजाऊ शक्ति बढ़ाई, जिससे पर्यावरण का भारी क्षरण हुआ।

मनुष्य ने अपने जीवन स्तर में सुधार के लिए बड़े पैमाने पर उद्योग लगाए, उनसे निकलने वाले कार्बन तथा अन्य हानिकारक गैसों के निस्तारण एवं शोधन हेतु कोई उपाय नही किया। इससे शुद्ध वायुमण्डल में कार्बनडाईऑक्साइड (ब्व्2) की मात्रा बढ़ी है। इससे पर्यावरण के लिये घातक अन्य हानिकारक गैसों का भी उत्सर्जन हुआ है। बढ़ते परिवहन के साधनों से वायुमण्डल में कार्बन-मोनो-ऑक्साइड आदि अन्य विषैली गैसों की मात्रा के साथ-साथ कार्बन की मात्रा भी बढ़ी है, क्योंकि इन वाहनों में डीजल, पेट्रोल आदि का अधिकाधिक प्रयोग हुआ है। वायुमण्डल में कार्बन-डाई-ऑक्साइड की मात्रा बढ़ जाने से तापमान में निरन्तर वृद्धि होने लगी, जिससे ध्रुवीय क्षेत्रों की बर्फ पिघलने से जल-प्रलय का खतरा मँडराने लगा है। नगरीकरण में वृद्धि के कारण महानगरों का गन्दा जल नदियों एवं समुद्र में उड़ेला जाने लगा, जिससे जल में प्रदूषण फैलने लगा, नदियों का जल पीने तथा नहाने लायक भी नहीं बचा है। यहाँ तक कि अपने देश की सबसे पवित्र गंगा नदी का जल भी आज अत्यधिक प्रदूषित हो चुका है। जिस अमृततुल्य जल में कीटाणु नहीं पड़ते थे, उस जल में अत्यन्त प्रदूषण फैल चुका है। कानपुर आदि कई स्थानों पर तो गंगा का पारिस्थितिकी तन्त्र इतना कातिल हो चुका है कि वहाँ की मछलियों एवं अन्य जलीय जीवों को भी भारी खतरा उत्पन्न हो चुका है। इस प्रदूषण का एक कारण और भी है कि गंगा आदि नदियों पर बड़े-बड़े बाँध बनाकर उनका जल रोक लिया गया है, जिससे आग नदियों के जल में कमी हो गयी तथा नदी-जल का प्रवाह कम हो जाने से प्रदूषण ने और भी विकराल स्वरूप धारण कर लिया है।

संदर्भः-

01- यजुर्वेद - सुक्त 12/32

02- दुर्गा सप्तसती पंचम अध्याय

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India's Emerging Retail Trend - A Review

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Abstract

This review article reads research papers published in various peer-reviewed journals and categorizes them into his five main areas of progress in the field. This article highlights key findings from each area and suggests issues for further research. A new retail area will also be introduced. It is hoped that this will encourage retailers and academics to conduct further research in these and other related areas in the future.

Keywords: Field, Encourage, Retailer

Introduction

Despite years of sophisticated retail environments, customer purchasing decisions are still driven by need. Nevertheless, the introduction of new business models and advances in technology has contributed significantly to providing customers with a different shopping experience. Therefore, it is important to build an understanding of the retail sector where innovation changes the game. This will also help us understand the trends and areas in which the retail industry will develop in the future. Today, the concept of omnichannel retail has been embraced by customers, giving them a broader view of various products and services. You can also get detailed information about various products and services. This gives retailers the opportunity to engage with their customers by providing them with targeted information, enabling focused customer engagement. Technology plays a big role here as it benefits both retailers and customers. Retailers can target the right customers, and customers can make smarter decisions by staying up-to-date on various products and services. However, in practice, not all customer decisions require such a detailed decision-making process. In some cases, the customer makes a quick decision and that decision is influenced by the product assortment and visual merchandising. This applies to both online and offline shops. When a customer makes a purchase from a retailer, the retailer captures all records including transactional, consumer environmental data. This helps us to predict consumer behavior, design more profitable strategies, and offer attractive offers to our customers. In return, retailers can increase their profitability.

Literature Review

This review article covers topics across his five areas: store location criteria, visual merchandising, technology advancements, the role of big data, and consumer engagement.

Technological progress

Technological advances in retail benefit retailers and consumers. It makes it easier for retailers to reach their target audience at a lower cost (e.g., via the Internet), while at the same time helping consumers make more informed decisions, better offers, and relatively faster be able to do service. A recent study by Inman & Nikolova (2017) highlights the benefits of technology for retailers and consumers, thereby increasing business profitability. They talked about mobile apps, self-checkout, scan-and-go technology, Que Vision, and smart shelf technology. With the help of self-checkout technology, customers can browse, take away and pay for selected items, for example, without contacting sales staff or cashiers. This gives customers full control over the transaction process,

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IMPACT OF SERVICE QUALITY ON CUSTOMER SATISFACTION AND CUSTOMER LOYALTY WITH REFERENCE TO SERVICE MARKETING: THEORETICAL PERSPECTIVE

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Abstract

The current research paper elaborates the role and importance of customer satisfaction and loyalty. Customers lead to success for businesses of all levels and types. Business organizations need to focus on a large number of customers. Because this customer satisfaction and loyalty must be perfectly integrated into long-term goals and other strategic aspects. This paper focuses on analyzing the Relationship of customer relationships with customer satisfaction and service quality measures. The purpose of this study is to explore the concepts of customer satisfaction, customer loyalty and their relationship. Additionally, this article examines the factors that influence customer satisfaction and loyalty at scale. This article analyzes the factors that influence customer satisfaction and lead to customer loyalty in multiple contexts. The author finally puts forward recommendations for improving service quality and customer loyalty in order to conduct business more effectively and efficiently. The Customer (CSI) is an economic indicator that indicates the quality of economic performance. Calculate the net present value of the assets of a company's customer base overtime. Information about strategic business applications. Predictors of consumer spending and corporate earnings. In this article, we focus our research on the Customer Satisfaction Index as a basis for implementing a new strategic level of marketing management to achieve sustainability.

Indexed Terms- Customer loyalty, Customer satisfaction, Customer satisfaction index, Service marketing, Service quality.

Introduction

As the era of sales ends, the era of marketing begins, with a focus on customer satisfaction and offering greater value compared to competitors in the target market. The success of any business organization

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Semantic Analysis of Twitter Data Using Natural Language Processing (NLP) Approach

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Abstract: COVID-19 effects almost everyone's life economically as well as socially. In this study, we develop a predictive model for semantic analysis of twitter data based on COVID-19 using natural language processing (NLP) approach. In this study, we have worked with three models: Bernoulli Naive Bayes, SVM (Support Vector Machine) and Logistic Regression. These models predict the positive and negative impact of this pandemic in people life by using their views, they share in twitter. The findings based on this public opinion suggested that model with Logistic Regression gives the best performance for semantic analysis of twitter data.

Keywords: COVID-19, Natural Language Processing (NLP), Twitter, Semantic analysis.

INTRODUCTION

Now days people are aware about how to share their views in social media such as Facebook, Twitter, Instagram about any current situation they are going through in the form of post, tweets and comments(Zhang & Cheng, 2022). In this study, we have done sentiment analysis of people about COVID 19 with their positive, negative as well as neutral views they have shared in twitter(Osorio-Arjona et al., 2021). Sentiment analysis is also known as opinion mining sometimes is the process to analyse the subjective information from the text. In recent years, sentiment analysis become a widely used technique to understand the opinion of people on any current issue on the text data (Leelawat et al., 2022). These sentiments can be subjective or objective. In this work our goal is to see people react to the Covid-19 with its positive and negative impacts.

In this study 5000 tweets are collected from twitter data developer platform. The language attributes we have chosen was marked as English language(Xu et al., 2022) and identify number of positive, negative and neutral tweets (Chinnasamy et al., 2022). Natural Language Processing (NLP) is used to pre-process the data because the tweets are not in pre-determined format (Fitri et al., 2019), it is in the form of short messages and in unstructured format, so sometimes it is very difficult to analyse such unstructured data. To analyse the text data easily, it is required to clean the data by removing irrelevant information from it and covert it in organized and structured way (Vijayaraj et al., 2022).

Machine Learning is a very powerful tool to analyse the data (Chimmula & Zhang, 2020; Handa et al., 2019; Hota et al., 2021). Machine learning techniques are used to trained a model to recognize sentiments from text by using large set of positive and negative text (Handa et al., 2019; Sharma et al., 2022). In this study, we have used three machine learning techniques for sentiment analysis: Bernoulli Naive Bayes (Chinnasamy et al., 2022), SVM (Support Vector Machine)(Agrawal et al., 2013; Huang & Wu, 2008) and Logistic Regression (Gunduz et al., 2017; Lee et al., 2019). All three methods are simple to use and produce accurate results. The comparative analysis between all three methods represents that Logistic Regression gave superior accuracy among all other applied methods.

This paper is organized as: section 2 represents the previous study done by various authors based on related work. Section 3 depicts the methodology applied, result analysis is discussed in section 4 and finally section 5 concludes the paper.

LITERATURE REVIEW

Authors (Chinnasamy et al., 2022) have done study about COVID-19 vaccine sentiment analysis using public opinions on Twitter to look at ideas of people who wrote on Twitter. He employed NLTK approach for sentiment analysis to evaluate public transit customers and got replies and feedback.

Authors (Diekson et al., 2023) has done Case study of Traveloka for Sentiment analysis for customer review. The researchers employs three classification methods: Support Vector Model (SVM), Logistic Regression and Naïve Bayes. This research work is looking forward to how most twitter users feel about performance of mobile travelling application. The result shows that SVM better accuracy to determine tweets about Traveloka.

Author (Fitri et al., 2019) has done sentiment analysis of social media twitter with case of Anti LGBT campaign in Indonesia using Naïve Bayes, Decision Tree and random forest algorithm. The sentiment analysis obtained in this study shows that Twitter users in Indonesia give more neutral comments. In this study, an accuracy of 86.43% was obtained from testing data using Naïve Bayes Algorithm in RapidMiner tools, where the accuracy is higher than the other algorithms, Decision Tree and Random Forest which is 82.91%.

Author (Leelawat et al., 2022) has study about twitter data sentiment analysis of tourism in Thailand during the COVID-19 pandemic using machine learning. Authors used three machine learning algorithms (decision tree, random forest, and support vector machine) in predicting the sentiments and intentions of the tweets was investigated. The results of this study suggest that to help restore tourism in Thailand, tourist destinations, natural attractions, restaurants, and nightlife should be promoted.

METHODOLOGY

Twitter data based on Covid is selected for sentiment analysis. To download the twitter data developer platform has been used. In this study, we have used three methods for sentiment analysis of collected data: Bernoulli Naive Bayes, SVM (Support Vector Machine) and Logistic Regression to classify the twitter data based on the sentiments: Positive, Negative and Neutral (Fitri et al., 2019). For data analysis Python has been used in this study by using its various tools. The Natural Language Toolkit (NLTK) is a computational linguistics package (Saura et al., 2022) used for text pre-processing such as lemmatization, removing stop word, cleaning text, removing twitter handles (@user), Special character removal etc over lexical resources (Chinnasamy et al., 2022). Matplotlib tool is used for data visualization.

In this study, three Machine Learning Classifiers (Logistic Regression, Bernoulli Naive Bayes, and SVM) has been used to analyse twitter sentiments.

Logistic Regression

Logistic regression is a type of supervised learning which is used to classify or predict any value. In the case of logistic regression, the predicted value is discrete and restricted to some kind of values based on the binary data such as yes/no, positive/negative etc (Diekson et al., 2023; Gunduz et al., 2017). Logistic regression is mainly used to solve problems based on classification(Hidayat et al., 2021). Logistic regression is applied in multiple areas such as financial Industries, Healthcare, sentiment analysis, marketing etc.

The probability of Logistic regression is calculated using the Logistic function or sigmoid function. The logistic function is s-shaped function used to convert data between 0 and 1 as shown in the figure 1.

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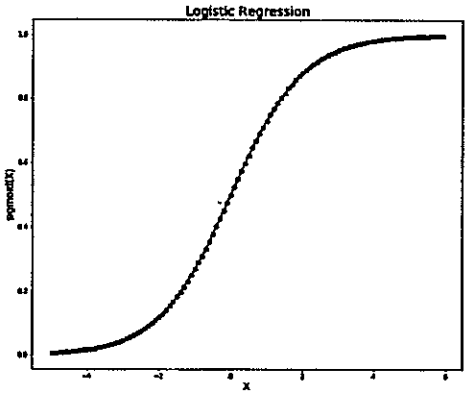

Figure 1: Logistic Regression

Bernoulli Naive Bayes

Bernoulli Naive Bayes is variant of Naïve Bayes and use the concept of Bernoulli distribution to accept only binary values and work on Bernoulli distribution(Fitri et al., 2019). Naïve Bays is a probabilistic classifier which means that given an input, it predicts the probability of the input being classified for all the classes (Prakash et al., 2020). It is called Naïve classifier because here all the attributes are independent and performance of one attribute does not affects the performance of other. In Naïve base all the features are having equal importance and in Bernoulli Naive Bayes, all the features are only in form of binary.

Support Vector Machine (SVM)

Support Vector Machine is a category of feed forward neural network. It is a binary learning machine with some highly elegant properties(Krishna et al., 2022). SVM is used for searching the best hyperplane by maximizing the gap between the groups of data(Hidayat et al., 2021). The SVM constructs a hyperplane as the decision surface in such a way that the margin of separation between positive and negative examples in maximized. SVM can be used to solve pattern classification and non-linear regression problems (Huang & Wu, 2008). SVM is an approximate implementation of the method of structural risk minimization. SVM is used in a variety of applications, including face detection, cancer classification, digit recognition, sentiment analysis, time series forecasting, image processing and so on.

RESULT ANALYSIS

The effect of COVID-19 is affects people globally and people share their positive as well as negative views using the social media platforms such as Facebook, twitter, Instagram etc. This pandemic has led to dramatic loss of human life. The affected people share their ordeal using social media platforms that how they suffered during this pandemic. Some social workers, bloggers and public figures also aware people about the pandemic. The Twitter is also such type of social media platform that helps the people to find reliable information to the global community in the curtail time of COVID-19.

In this study we have developed an Automated Machine Learning Sentiment Analysis Model to identified and analysed the sentiments and understand the opinion of people on the basis of tweets on topic "COVID19". We implement the Twitter sentiment analysis model to identify the sentiments of tweets as shown in figure 2.

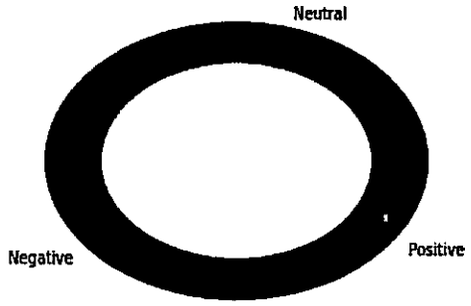

Figure 2: Sentiments of Tweets as Positive, Negative and Neutral.

Before giving the data to model, the data pre-processing has been done by removing unnecessary noise like repeating characters, emojis, URL, punctuations etc. and apply Stemming and Lemmatizer to the pre-processed data. In the data pre-processing the count of hashtags found in word dictionary is also identified. Top 10 hashtags that we have found while pre-processing the data is shown in figure 3.

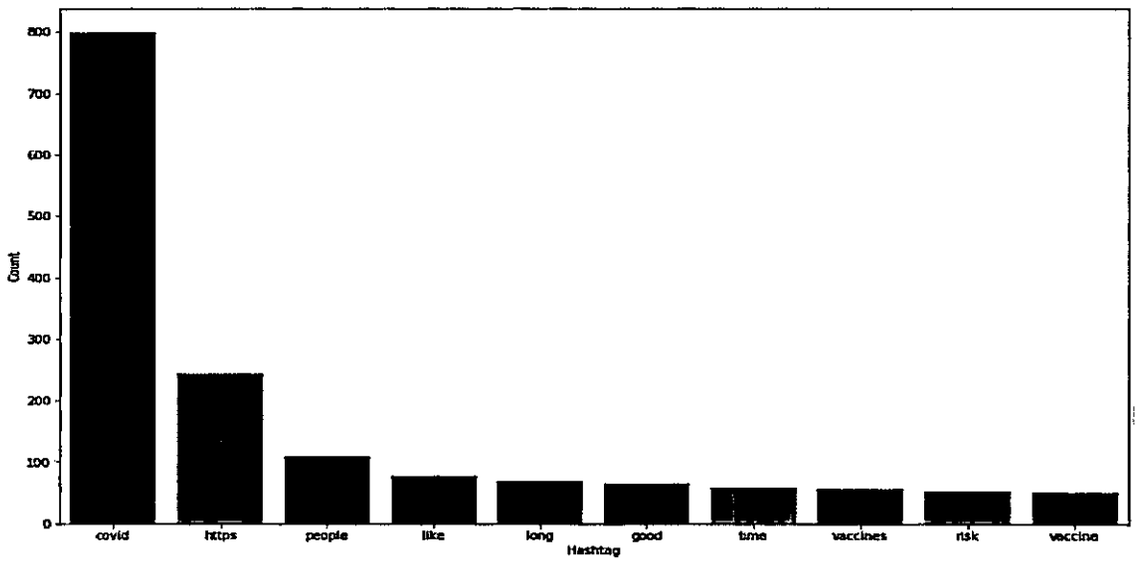

Figure 3: Top 10 hashtags used in tweets.

In this study, we have used three models for sentiment analysis: Bernoulli Naive Bayes, SVM (Support Vector Machine) and Logistic Regression to classify the twitter data and try to find out which is performing better among all three. The sentiments has been categorized in three types: Positive sentiments, Negative sentiments and Neutral sentiments (Diekson et al., 2023). The visualization of frequent words that are based on COVID-19 is shown in figure 4. The cloud of words has been also displayed for positive, negative and neutral tweets as shown in figure 5, 6 and 7 respectively.

Figure 4: Visualization of frequent words of twitter based on keyword "COVID19"

Figure 5: Visualization of Positive Sentiments

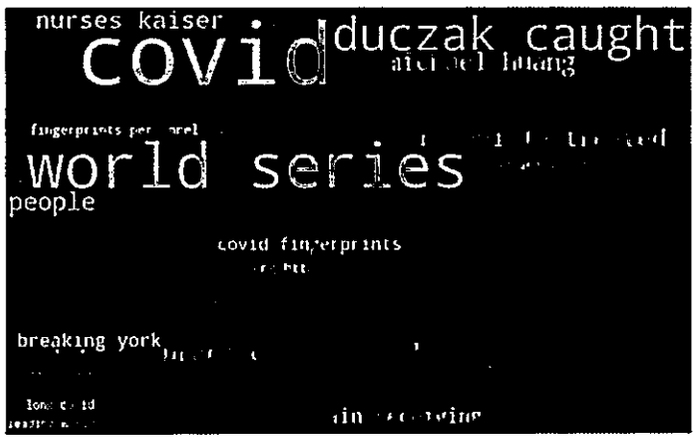

Figure 6: Visualization of Negative Sentiments

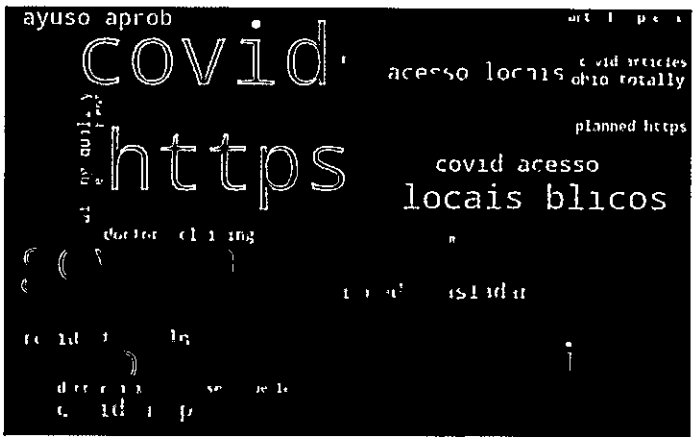

Figure 7: Visualization of Neutral Sentiments

For sentiment analysis three models is developed: Model 1 (Bernoulli Naive Bayes), Model 2 (SVM (Support Vector Machine)) and Model 3 (Logistic Regression). In these models sentiment types are represented as 0.0, 1.0 and 2.0 for positive, negative and neutral sentiments respectively. The table depicted the sentiment analysis of all three models with performing measures: precision, recall, f1-score and support and average total of all performance measures are also shown in table below. Table 1 represents the Model 1 (Bernoulli Naive Bayes) for all three sentiments. Table 2 represents the Model 2 (SVM) for all three sentiments. Table 3 represents the Model 3 (Logistic Regression) for all three sentiments.

Table 1: Model 1 (Bernoulli Naive Bayes):

Sentiment Type	Precision	Recall	f1-score	Support
0.0	0.82	0.78	0.80	491
1.0	0.68	0.67	0.67	241
2.0	0.84	0.89	0.87	518
Avg/Total	0.80	0.80	0.80	1250

Table 1: Model 2 (Support Vector Machine):

Sentiment Type	Precision	Recall	f1-score	Support
0.0	0.86	0.79	0.83	491
1.0	0.76	0.63	0.69	241
2.0	0.81	0.93	0.87	518
Avg/Total	0.82	0.82	0.82	1250

Table 1: Model 3 (Logistic Regression):

Sentiment Type	Precision	Recall	f1-score	Support
0.0	0.87	0.80	0.83	491
1.0	0.81	0.63	0.71	241
2.0	0.81	0.78	0.89	518
Avg/Total	0.83	0.83	0.82	1250

The sentiment analysis model based on Bernoulli Naive Bayes method (Model 1) shows the average precision value 0.81, recall 0.8, f1-score 0.80 and support is 500. The sentiment analysis model based on Support Vector Machine method (Model 2) shows the average precision value 0.87, recall 0.87, f1-score 0.87 and support is 500. The sentiment analysis model based on Logistic Regression (Model 3) shows the average precision value 0.86, recall 0.86, f1-score 0.86 and support is 500. We compare the performance of all these three models for sentiment analysis based on collected data from twitter. Therefore, the comparison suggested that it is effective to apply logistic regression model for sentiment analysis including pre-processing the data based on various performance measures.

CONCLUSION

In this study, tweets based on sentiment analysis has been analysed using NLP approach and three machine learning techniques: Bernoulli Naive Bayes, SVM (Support Vector Machine)) and Logistic Regression. The accuracy of model is measured by f1- score and by experiment we got Bernoulli Naive Bayes (accuracy = 0.80) < SVM (accuracy =0.83) < Logistic Regression (accuracy = 0.83) for negative sentiments and Bernoulli Naive Bayes(accuracy = 0.61) < SVM (accuracy =0.69) < Logistic Regression (accuracy = 0.71) for positive sentiments and Bernoulli Naive Bayes(accuracy = 0.87) < SVM (accuracy =0.87) < Logistic Regression (accuracy = 0.89) for Neutral sentiments . A comparative study has been done and found that Logistic Regression is outperform that other techniques for sentiment analysis with higher accuracy.

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Virtual & Feathery World of Tribal Folktales

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I would like to differentiate between the so called mainstream view from the tribal point of view through the following folklore.

In all the states of the Northeast, the Sun is considered to be a woman and the Moon appears to be the opposite, not only in contrast to the entire Hindi literature. This explanations are also captivating.

One day the moon's attitude got disturbed towards its sister Surya. He became enamored of her, so Surya ran to kill her. Frightened, the moon hid under the cover of a tree. Since then the period of moon's hiding has been called Amavas. This is the explanation of the distinction of missing fifteen days in the month of the moon. That is, it is wrong to have a sexual eye on a sister! The flight of imagination was so high that the primitive psyche linked the code of ethics to the cosmic characters! How wonderful is the adjustment of man and creation! The imagination of the tribal mind by linking a geographical fact to the weakness of man made a living metaphor. This story is famous in Arunachal Pradesh. Possibly when the society gave the myth of the brother-sister would have fixed a new code of conduct, then in order to make the taboo acceptable the two main characters of nature ie. the sun and the moon would have been supported in that Tribal mind.

Let's move on to the second part of the Bodo clan, where clouds and lightning are considered brothers and sisters. This myth is also related to the opposition to the practice of brother-sister marriage.Both parents and grandparents together decide to get Badal and Bijli, both brothers and sisters, to get married, but the sister does not approve of the relationship. She plants a 'Chauthang' tree in the courtyard, which crosses even the sky. Chothang is a word of Kokborok language. This language is spoken in Tripura. In Tripura, the Boro caste is known as Borok, so this story is also prevalent in the Boro tribe. Bijali runs to escape the marriage and climbs that tree and starts climbing the stairs of the sky. The cloud roars, shouts, hums, runs after him. The 'Pauchai' ie lungi, which is tied around the waist of the sister, slips from her buttocks in the process of escape. According to this Bodo myth, those bare shining buttocks still flash as lightning in the sky and the thundering brother runs continuously after his sister Bijli in the form of a cloud. His same roar has become a thunder of clouds. This story is repeated from Assam to Tripura. This is a myth showing the phase of the process of human relationship formation. When marriage in sister-brother relationship would have been banned or a sister would have refused to marry a brother, perhaps the tribals changed the experiences of that period of society into the characters of clouds and lightning, creating a live story. It is easyto communicate that sister-brother marriage is forbidden.

This myth also confirms the fact that it is not acceptable that there were no relationships in the society. Sexual relationship between man and man was not restricted. He was free from the bondage of relationships. Tribal folktales and myths tell the story of human relationships, human language, the formation of human voice and speech, and its settlements, travels and development, as well as its displacement and resettlement. They do not frighten or appease the society by giving punishments or boons like the myths mentioned in our religious scriptures. They present the facts and events to the society by giving logical conclusions. They satisfy evil spirits by offering gifts or animal sacrifices.

A very important aspect which I would like to point out is that tribal society is very different from other non-tribal societies in its social structure as well. In the Hindi region and the rest of India, patriarchy is at the center of the social system, which has taken a special kind of rigidity in almost all areas. This is the reason that almost every hard object, which is aggressive, powerful and courageous, is considered to be male like the sun. But in the Northeast, this metaphor becomes feminine, that change the entire literary composition.Serious differences can be found in the social structure of tribal society as well. Do not similar traditions, cultural objects constitute the formation of ideological hierarchy? To consider a powerful model of nature like the sun as a woman,

presupposes a complete thinking, which does not have the hegemony of man. In the rest of India the same powerful pattern is attached to the man and his hegemony. In fact, tribal culture, thinking and vision are completely opposite to the individualistic, feudal, imperialist and somewhere monarchist thinking and vision of non-tribal society. They are not individualistic, they believe in collective thinking and collective lifestyle, live a collective life, where there is no question of high and low. This society is fostering democracy. From the top to the bottom, their chosen system rests on the pillars of fraternity, equality and freedom. The scope of love and relations is so vast, generous and full of compassion - so complete that we find our thinking very small, our outlook very narrow. In front of them we seems like Dwarves. They also have the distortions that any human being has but they are not disguised - no hypocracy. They are an open book. They have no concept of wealth or superiority! No fanatical beliefs or wondrous charisma They have inherited their lifestyle, not religion. Therefore they have no other power like God and consequently there is no temple to establish any power. Nor is there a special center around which Beliefs or miracles can be carried out. They have the limitless dimension of nature - the vast courtyard and their ancestors.

If the whole sky is man's love, then the whole earth is his beloved. Sun and Moon are his children. Therefore, no single faith or metaphor is sufficient and capable to preserve, encompass the vast nature, as a result of which various metaphors, patterns and states of different forms of nature have been created, which are in their imagination. The same is reflected in their literature.

Tribals have deep poetic imagination deep poetic thinking! In the stories of the origin and creation of world and celestial bodies, an aura like Milton's is found. In tribal imagination, the earth and the sky are two lovers. When the sky is in love with the universe, then trees, plants, animals and birds are born. But lovers have to be separated. If they remain hugged, where will the place for the children be? According to the 'Miniyoga' story, the earth always yearns to be embraced with its lover Akash. But just as she is about to rise upwards to meet her beloved sky – her two children, the sun and the moon, come between her. The earth blushes and stops. She couldn't move forward. The part of the earth which was rising towards the sky, remains the same forever,that part is today called the mountain.

According to the 'Sigmon' legend, the rainbow is the ladder on which the Almighty climbs to the moon to meet his wife.

Ever since the creation of the universe and man began to speak and think, perhaps the imagination began to take flight. When man narrated his imagination it became 'story'. Similarly, perhaps the Khasi love stories of Meghalaya, Manik-Raitang, Peduki and Twelwungi of Mizoram, touch the heights of love. Their love stories and myths are amazing. In their love story, there is no discrimination between the love of man or animal and bird. The love stories of both are told and heard with equal emotion and love.

In the love story of Manik-Raitang, a 'Siem' means the queen of the chosen chieftain, after his going to a foreign land after hearing flute sound coming from far away, one night, she is suddenly pulled towards him and reaches,near a broken hut outside the palace, sitting in which a teary-eyed young man was playing the flute.

That cycle continued every night. On hearing the flute every day, the queen would leave the palace and go to meet the tearful young man. After all, one day the queen expressed her love for that young man. Out of this relationship a son was born.

After a few years, 'Siem' returned to his kingdom. He was saddened to know the truth. He started searching for the lover of the queen. According to the order of 'Siem', in which all the visitors had to proceed by giving a banana gift to the child. The people gathered with the banana, but the child did not accept the banana from anyone.

Who has been left in the public, for whom this child is waiting? "Siem thundered again, the pawns ran away! The soldiers came holding a tearful young man. Surprised, the child went ahead and took the banana from this young man like a beggar! There was silence in the court. The people started looking at the beggar in amazement. The same question started repeating again and again in the mind of the public "The queen loved this beggar - why?

The royal administration, enraged by this love affair of the queen, announced that the young man would be burnt alive. The queen was locked in the room. The pyre was lit outside the palace. A very handsome young man in a grand dress playing upon flute was coming towards the pyre.

On the other hand, the queen was distracted, but the mind was active. She will not let her beloved suffer the punishment alone! Queen tied her pajab in the feet of a cat and left the cat in her room, so that he could listen payal's sound and be sure that the queen is locked in the room. The queen ran from the window to the pyre. The yound beggar till that moment had climbed on the pyre.There was a rustle! ... that suddenly the queen came running and jumped on the pyre! Both were burnt deadWhile climbing on the pyre, both the lovers threw their flute on the ground. The public could not do anything against the king's order, but with their sympathetic support, they termed the queen's love as unblemished great love.

The entire Khasi society connected its relationship with the feeling of love in front of that consecration. This relationship of pain and sensation became so strong that even today, every year Khasi society organizes a fair in the memory of that loving couple at that funeral pyre. It is said that the flute which the young man had thrown on the earth with the pyre, has grown there as a bamboo.

What would you call this love? Is it sin or deviance? A wonderful river of love resides in the tribal psyche - which never gets polluted.

Perhaps from time immemorial, people's dreams, expectations, fantasies, 'wits' and conclusions have been taking the form of folk tales. In fact, the curiosity, yearning and effort to know the origin of man, nature's secret and beginning have been taking the form of different myths. There is also a sense of respect attached to the myth. The tribals do not have any scriptures, (scripts or sacred texts etc.), so those myths are repeated every year during some ritual for centuries as a heritage. Their heritage is not a temple or building but the whole nature. Nature is its place. Every story reader has been adding something of his own.So the original story keeps changing according to the 'estimated-statements' of the narrators. Sometimes even the hero changes. The conclusions change but despite all this, the base of the story remains the same.

Folktales or myths are there in every language of the world. The special feature of tribal myths and folk-tales is that they imagine every existence according to their culture and according to their contemporary understanding, they interpret them through their stories or myths. Their imagination takes on a logical form and the solid ground of reality saves them from miracles.

Along with the creation, the earth and man, the tribals have also made various forms of nature as the characters of their stories. They tell the story of creation of clouds, lightning, river, mountain, flute, moon-sun, so also create, narrate and live the infinite stories of infinite forms of love. These stories are paved with love from humans to four-legged, two-legged and birds. These stories and tales, from prehistoric times, century after century, have been passed on from generation to generation, the narrators have changed. Even the names of the characters change whenever and wherever they are from time to time, but the underlying idea, sensation or concept of thought remains the same. The story of 'Kobad' in Arunachal has been going on since the prehistoric times when the animal was in the process of becoming human. This is the story of the existence of a democratic system, whose protagonists and characters were first animals - then semi-humans joined the animals and in the end only humans remained. His Kovad-Katha also covers today's democracy. These myths, legends or folk tales are so intertwined that it becomes difficult to draw a dividing line. Nevertheless, these stories and myths can be divided into certain parts according to the subject. Such as- 1. myths of creation, 2. love stories, 3. metamorphosis, 4. stories of humanization, 5. stories of stupidity and cleverness, 6. Didactic stories, 7. Cultural stories.

The heroic stories discovered in these stories are often the fictional conclusion of churning of reality. Sometimes even the concrete reality becomes the guide of the society or the conductor of the social ideal by becoming a greater truth than the mythical character or hero.

These tales telling displacement of tribals, migration, mutual and with outside tribes and invaders During conflicts or natural calamities, the whole society and a few individuals of the society took risks, courage and valor to protect the society, which often sung and recited in the form of legends or ballads.

Despite being true, our historians ignored them under some bias or a conspiracy, possibly deliberately. Sidho-Kanhu, Tilka Manjhi, Birsa Munda of Jharkhand and Rani Chinamma of Karnataka and Rayanna an employee of English empireandSitaram Raju of Andhra Pradesh, Mizoram. Rani Rupliani, Tirot Singh and Nawa of Meghalaya etc. have become symbols of liberation, rebellion and uprising.

Creation-saga

Their history can be repeated, narrated and heard every year in their rituals and festivals. Now they too have learned to write. Earlier outsiders used to write, now they themselves have started writing and these are the people who did not have any script till a hundred years ago. Foreigners gave them the script. Today they are making their own scripts.

Wings are on. to his pen. Imagine camping in a forested area in or around Karbi Anglong in Assam for a day or so, a Karbi group - which has settled in this high corner of Assam, fighting and winning - fighting - fighting - fighting - winning - through Tibet, Burma and probably there Unaware of the oppression of the king of is preparing to flee from there. That group is still in the journey. That group is busy. Is afraid - though small, few in number, but has not lost courage.

Where initially this group took shelter, the king of that place to feed milk to the cubs of his lioness takes up the hobby of collecting milk from the breasts of karbi women. Whether their children die of hunger or become malnourished - the king is not worried about it! This injustice was not tolerated by a brave woman of the same group! He cut off the messengers of the king who came to ask for milk with her axe. There was no second thought after that . The anger of the king was certain. Due to this fear, the entire tribe fled overnight from there!

That group has been running continuously! Bored in rivers overflowing with floods, cutting bridge after bridge to stop the chasing king's soldiers, erecting tree barriers, crossing rivers with the help of tree trunks, pushing back the death, overtaking Karbi group running continuously. With the hustle and bustle of permanently settling somewhere with the speed, it is going on continuously, it is being led by the same brave woman who killed the king's messengers.Bravery of this woman the history has not recorded anywhere, but this saga is written on every moment of the centuries. Every Karbi hears and recites it from birth to death. Seeing the rising sun, seeing the moon laughing, with every thump of the wind.They tie this story in rhythm. This story brings sleep in the eyes of every child by becoming a lullaby at night.

These myths of the tribals, these stories, whether they are of creation or of all other questions, along with their answers are also present, as well as there is an explanation of each part and aspect of creation and nature. These stories are the epitome of human curiosity. Curiosity arose in man questions and men went out in search of answers. Dreams gave him color. Imagination gave him wings and wings gave him flight. But the flight of the wings was being controlled by the force of the earth's gravity. These desires to be connected to the earth and to touch the sky, created these stories, created these myths - of their origin, of their evolution and of their love.

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Common and Contrasting Features of Verb Use in English and Hindi

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(ABSTRACT)

The first and foremost thing for social living is communication among the members of the society, and of all the means, it is only communication through language which is the most important. Languages are different but their purpose is the same. Therefore, the logic of grammar requires languages to have almost the same word categories and sentential functions. However, the conventions of each language, together with certain logical considerations connected with its problems affect ways of expression. Obviously, then, the phrase structures of any two languages cannot be the same despite their having many common features between them. I think it would make an interesting study if we work out the common and contrasting features of verb use in English and Hindi. Not only this, deployment of the method of comparison and contrast will contribute to the learner's understanding of linguistic problems and help a Hindi speaking learner learn correct English early.

Both English and Hindi have the same Subject—Predicate form of an indicative sentence, yet they differ in structure. In Hindi, the verb comes in the end, but it comes in the middle in English. The consequence of this is that translation of a simple Hindi sentence such as "क्लास में तीस बच्चे हैं" cannot be literally translated into English because whereas the verb in
Hindi comes in the end it comes in the middle in English. The expression
"are thirty students in the class" does not make a full sentence; it is only
a fragment. Therefore, English uses the word "there" as a subject term to fill out the sentence; it is devoid of meaning and grammarians call it "empty subject."

In contrast with Hindi, English verbs are gender—neutral. In other words the same word can be used for either gender. As opposed to English, pronoun words in Hindi are gender– neutral. English experienced the difficulty in translating the Hindi sentence "यदि कोई हत्या करता है तो उसे मृत्युदण्ड की सजा मिलेगी" because it cannot have a single substitute word for the gender-neutral word "उसे". After the women-lib movement, they translated the sentence thus: "If anyone commits murder he/she shall be punished to death." Interpreting the phrase "he/she" as meaning he alone or she alone or both, one can use the pronoun "they" as well, and that is how they now combine in their writing "anyone" with "they" even as the former word is singular and the latter one is plural.

All languages have the two kinds of verbs because at a certain point of time you either perform an action or do nothing. There are, therefore, two kinds of verbs– namely, action verb (i.e. a "do" verb) and state verb (i.e. a "be" verb). To express continuance of an action or a state of being, languages have developed their own methods. However, whereas Hindi has these two kinds of verbs, English has two more kinds. To say that an action denoted by the verb has ended, it uses the verb "have" with past participle form of the action verb. The last kind of verbs that this language uses is called "modal verbs". It is because of the modal verbs like "shall" and "will" that a statement about the future has become possible in it. The difficulty in saying about a future event or plan without a modal verb was due to this fact that English does not have a future tense of verbs. Time is divided into three parts—the past, the present and the future. Hindi has a certain form of the verb for each period of time but
English has only two, one for the present and the other for the past. The
Conjugation of verbs in English bears out that there are only the past tense and the present tense. However, English does not deny future time. What, then, can be the meaning of time and tense; how are they different. Well, Time means time: the past, the present and the future, all taken together. But, what we call tense of an English verb is just a form of verb that refers to either the past or present time.

There is a certain difference between ordinary verbs and modal verbs. Modal verbs refer to various aspects of human thought and action such as making a plan or expecting an event, talking of something as possibility, assessing one's capability to do something, performing an action as habit, doing something as responsibility or doing for the sake ethics, showing humility, making request etc. Ordinary verbs in English refer only to the past or present and combine with a modal to talk of a future event or plan. Modals, perhaps with exception of the verb "used to", refer to something of the present or future. To seek somebody's help one can request saying, "Will you help me?" To be more humble, one could say, "Would you help me". The help is sought for future time but the same verb can be used in its present or past tense. But, so far Hindi is concerned; one generally makes a request using a verb in future tense.

One special feature of English is that it uses a plural verb for a singular subject in a subjunctive sentence — for example, God bless you; if I were in his place, I would do just the opposite; if my elder brother were the President of the club, then. . . . A translation of these sentences into Hindi will show that the language may use a singular or plural verb considering the status of the subject term. The above sentences translated in Hindi would read thus: ईश्वर तुम्हारा भला करे; यदि मैं उसकी जगह होता तो ° ° °; यदि मेरे बड़े भाई क्लब के प्रेसिडेंट होते तो ° ° °

Having said so many things, the last point that I wish to make is that it has not been easy for English to express a certain kind of passive statement. Suppose a Hindi-speaking lady going up a hill suddenly stops and says, "अब और नहीं चला जाता". This, indeed, is a passive statement, but not a statement in Passive Voice. "Be" is a passive verb but it is of no use here because the whole idea that needs to be expressed is that the lady did wish to climb the hill but she can't do it now. English conveys such idea by saying 'she now finds it difficult to climb.'

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Green Synthesis and the Formation Kinetics of Silver Nanoparticles in Waste Water Villege Sonsari

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ABSTRACT:-

In this study, we present the production of silver nanoparticles in aqueous extract by the green synthesis approach at room temperature. The structural, morphological properties as well as formation kinetics of the synthesized silver nanoparticles were characterized by UV-VIS, STEM, XRD, Raman and FTIR measurements. Mono-dispersed and very stable silver nanoparticles with size of 15±5 nm and face-centered cubic crystal structure were synthesized in aqueous extract. The kinetic studies of silver nanoparticles formation in extract show that silver nanoparticle formation reaction reached the equilibrium within 24 h and fit in the first-order reaction kinetics. The results clearly show that the size of fabricated nanoparticles is independent on the dynamical formation process since the reaction time and initial silver ion concentration did not affect on size and morphology of the produced particles.

Keywords: Coleus aromaticus, polydisperse, silver nanoparticles, bioreductio

INTRODUCTION

Fabrication of nanometer-sized particles (NPs) is a very popular and rapidly developing field for various branches of science such as physics, chemistry, biology and bioengineering [1, 2]. They are commonly used in daily life such as clothing, self-cleaning windows, hydrophobic-coated surfaces [3, 4, 5]. The nanoparticles ranging in size from 1 to 100 nm have many advantages due to confinement of the features such as thermal conductivity, chemical stability, optical electrical and catalytic properties [3, 6] into a very small size as well as their larger surface area-volume ratios compared with their bulk form [7, 8, 9]. Among them, metal nanoparticles (especially Ag) are quite important for drug delivery because of their antimicrobial, antifungal and antibacterial effects [10, 11] and they are widely used in many technological and industrial areas such as optics, medicine, food safety and cosmetics [12, 13]. There are many techniques to fabricate metal nanoparticles that can be classified into; top-down and bottom-up processes [14]. Although mechanical milling, chemical etching, sputtering and laser ablation can be given as an example in top down method; chemical vapor deposition, sol-gel and spray pyrolysis can be listed for gathering molecules or atoms by chemical reactions for bottom-up approach [15]. Obtaining nanoparticles by physical and chemical methods have been studied for a long time [16, 17]. However, these methods require organic passivation agents to prevent nanoparticles from aggregation. Most of passivation agents are toxic and they pollute the environment in mass-production. Besides they require high cost and hazardous chemicals and special environmental conditions for synthesis such as temperature, pressure or pH. However, green synthesis of nanoparticles is cheap, straight-forward and less-toxic because of employing enviromentally friendly or toxic-free biological reagents such as plant, bacterial cell, algae and fungi for reduction from the metal salts [18, 19, 20, 21, 22, 23, 24, 25]. Plant extracts have attracted great interest in the greensynthesis of different types of nanoparticles compared to other bio-molecules due to their easy availability, biocompatibility, cost-effectiveness, and high stability [26, 27, 28, 29]. The main components in a green synthesis are a plant extract of interest and the solution containing metal ion. The plant extract (such as mulberry leaves [30] creates a medium to reduce of metal ions and provides a capping agent to stabilize the synthesized nanoparticles. Plant extracts mostly contain phenolic compounds, terpenoids, flavonoids, alkaloids and protiens which provide low-cost and non-hazardaous bioreduction of metal ions to metal nanoparticles.Silver nanoparticles have been synthesized by many researchers using different plant extracts by green synthesis approach in the literature.In the studies, the researchers have mainly focused on the effects of experimental conditions on size and chemical composition of the fabricated silver nanoparticles. However, there is not much work to develop a detailed understanding about silver nanoparticle formation kinetics and mechanism in such complex plant extracts. A few studies were done on the kinetics on

silver nanoparticle formation. Okafor et al. synthesized silver nanoparticles at 75 ◦C and investigated the reaction kinetics and biological activities. Amini et al. fabricated silver nanoparticle with Avena Sativa aqueous extract and E.Z. Okka, T. Tongur, T.T. Aytas, M. Yilmaz, Ö. Topel and R. Sahin: Preprint submitted to Elsevier Page 1 of 9 hydro-alcoholic extract at different temperatures and concentrations of silver nitrate ($AgNO_3$) solution. The results showed that both diameter of the synthesized nanoparticles were inversely proportional to the temperature and the amount of nanoparticles depended on the $AgNO_3$ concentration.The synthesis conditions did not affect the size of nanoparticles. Prathna et al. tried to determine the temporal evolution of silver nanoparticles over time using experimental and theoretical models. Their results indicated that particles formation starts in as less as 2 hours reaction time. The agglomeration tendency increased at after the 4th hour of interaction. The particles conformed the Lifshitz-SlyozovWagner kinetics until 3.5 hours reaction time.In another work Hussain et al. carried out kinetic measurement of fabricated silver nanoparticles by green synthesis method. Their results showed that silver-mirror reaction provides an easy rout to prepare quantum dots. The formation kinetics of silver nanoparticles is independent from glucose concentration and the nucleation rate was proportional with ammonica .In the present study, we therefore investigated the formation kinetics of silver nanoparticles in Inula Viscosa extract to control the particle formation mechanism and to develop a detailed understanding about silver nanoparticle fabrication in plant extracts. Inula Viscosa is a self-growing species belonging to the Asteraceae family, which is common in the Mediterranean region. It contains many bioactive components such as guainolides, sesquiterpenes, lactones, flavonoids and essential oils Therefore, it does not only exhibit reducing and stabilizing properties during nanoparticle synthesis but also has high biological activities such as anti-inflammatory, anti-septic, antipyretic, antibacterial, anti-fungal In addition, Inula Viscosa reduces the drug resistance of cancer cells so it can be preferred in phototherapy for supporting chemotherapy. Consequently, the synthesized silver nanoparticles in Inula Viscosa extract are promising to have important biological activities such as antibacterial, anti-fungal, anti-cancer etc. Silver nanoparticles were synthesized by green synthesis approach using Inula Viscosa extract at room temperature. The effects of the synthesis conditions such as concentration, reaction time and light on silver nanoparticle formation, particle size and morphology by means of UVVIS spectrophotometry, STEM microscopy as well as Raman and FTIR spectrometry. The formation kinetics of silver nanoparticles were also studied by spectrophotometric method using a UV-VIS spectrophotometer.

Experimenta

l Chemicals, $AgNO_3$, were the same as used earlier [23, 35]. was used after purification under a stream of nitrogen gas. Doubly distilled and deionized water (specific conductance (1-2) × 10-6 ohm-1 cm-1) was used as solvent for preparing the stock solutions of all reagents. Owing to the aerial oxidation of aniline in water, solutions were prepared daily, stored in amber colored glass bottle.

Kinetic method In order to determine the rate of the silver nanoparticles formation, reactions were carried out in three-necked glassstopper flasks fitted with a double - walled spiral condenser to arrest evaporation. Required amounts of AgNO3 (oxidant), and water, were introduced into the reaction vessel. The reaction was started by adding the requisite, and thermally equilibrated, The progress of the reaction was followed spectrophotometrically (UV-visible Recording Spectrophotometer, UV-260 Shimadzu, with 1cm quartz cuvettes) by pipetting out aliquots at definite time intervals and measuring the absorbance of silver sol formation at 400 0.01mol dm^{-3}.

Preparation and characterization of silver nanoparticles For the preparation of silver-nanoparticles, AgNO3 solution (0.01 mol dm-3) were used, respectively, as a metal salt precursor and a stabilizing agent. was also used as a reducing agent. The transparent colorless reaction mixture containing $AgNO_3$. The appearance of color was indicated the formation of silver nanoparticles. Transmission electron microscope was used to determine the size, shape and the size distribution of the silver nanoparticles. Samples were prepared by placing a drop of working solution. on a carbon-coated standard copper grid (300 mesh) operating at 80 kV. FT-IR experiments were carried out on a Bruker Equinox 55 spectrophotometer. Silver sol was examined as usual by conventional method using a thin KBr pellet.

RESULTS AND DISCUSSION

Visual observation Formation of silver nanoparticles was preliminarily well known by changing of yellow to brown while adding leaf extract with silver ion solution due to the excitation of free electrons in the nanoparticles [17]. The colour formation was occurs within a few min after addition of leaf extract. Metal nanoparticles exhibits different colours in solution due to their optical properties. Silver nanoparticles were characterized by forming of brown colour. Previously, increasing colour intensity with in 30 min was observed using leaf extract of Acalypha indica [18].

UV-Vis spectrophotometer analysis Effect of silver ion concentration The UV-vis spectrum (Fig. 1) shows effect of silver nitrate concentration in the silver nanoparticles synthesis by using the leaf extract of C. aromaticus. Characteristic surface plasmon absorption band was observed at 460 nm for the brown coloured silver nanoparticles synthesized from 1 mM silver nitrate. At the 1 mM concentration shows narrow band with increased absorbance whereas other concentrations shows broad peak at 460 nm. The absorption was increased while increasing the concentration of silver ions from 1mM to 5 mM. In 1 mM concentration the nanoparticles synthesis and size reduction was started quickly due to the more availability of functional groups in the leaf extract. While increasing the substrate concentration the large size and aggregation of nanoparticles was occurred due to the occurrence of compete between silver ions and functional groups of 10 ml leaf extract. Thus, the optimization study showed a significant effect of concentration on the synthesis of silver nanoparticles. This investigation concludes that the optimum silver nitrate concentration 1 mM is suitable for nanoparticles synthesis. Similarly, increasing intensity indicates increasing concentration of nanoparticles. Higher concentration of silver nitrate suggests the formation of larger nanoparticles [19].

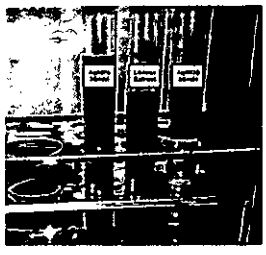


fig.1. colour change yellow to brown indicate formation silver nanoparticles (a) leaf extract (b) after addition of leaf extract into 1 mM.

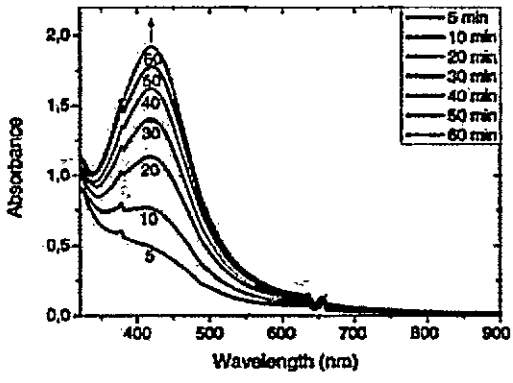
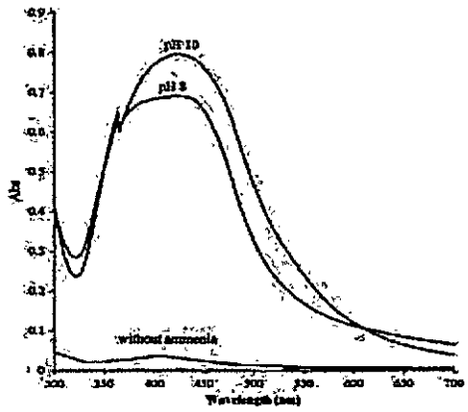


Fig.2. UV Spectrum of synthesis of silver nanoparticles at different concentration of $AgNO_3$

Effect of pH pH play an important role in the nanoparticles synthesis, this factor induce the reactivity of leaf extract with silver ions. The influence of pH in the nanoparticles was evaluated under different pH of the reaction mixture by the leaf extract (Fig. 3). In low pH, small with broadening SPR band was formed indicates formation of large size of nanoparticles. In Coleus aromaticus leaf mediated synthesis alkaline pH 8.2 shows narrow peak at

460 nm with maximum production with sharp peak. The sharp peak indicates formation of spherical shape of silver nanoparticles [20]. Several results are reported pH is plays an important role in shape and size control synthesis process of silver nanoparticles. The present investigation indicates alkaline pH is more suitable for synthesis of silver nanoparticles. Similarly, Pandey et al. [21] reported that the gold nanoparticles show maximum stability at the pH 10 using aqueous extract of Momordica charantia



CONCLUSION This present investigation shows green synthesis silver nanoparticles using C. aromaticus leaf extract is more compatible, large scaled up and less time consuming process. Rapid synthesis of silver nanoparticles was attained maximum when altering such effective parameters. Leaf extract was acts as a capping agent and reducing agent in the nanoparticles synthesis. It is a better source for the rapid synthesis of silver nanoparticles. This green method is a single step process, economic viability; effective and rapid production of nanoparticles could be used to biomedical and environmental applications.

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"Importance of Knowledge of Endocrine Disrupting Chemicals in Indian Wastewaters"

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Abstract

Todays, some chemical in the environment that is suspected of harmful for our health. It may do this by disrupting our hormones, triggering cancer, causing heart disease, affecting brain development, or any combination of these. The allegations are generally backed up by references to the scientific literature but interpreting the data in practical terms is very challenging. We would like to take endocrine disruptors for example. These are chemicals that can in some way interfere with the chemical messengers we call hormones. Such interference can cause cancer, developmental issues, learning disabilities, attention deficit disorder, obesity, and reproduction problems, especially if exposure is during the critical period of development between a fertilized egg and a full formed baby. Exposure to chemicals that would be innocuous in an adult can at this point have serious consequences. It stands to reason that effort should be made to reduce exposure to endocrine disruptors particularly during pregnancy. Chemicals to which we are exposed. We do need to be concerned about alcohol, lead, smoke, mercury, some pesticides, and some flame retardants, but we also need to understand that just because some substance in a pure form causes an adverse effect in a test tube or in an animal doesn't mean that its presence in a consumer product presents a risk. There are thousands of chemical reactions going on in our body all the time including numerous ones that break down potential toxins. The human body and its interaction with chemicals is far too complex to yield simple answers.

Introduction

In recent times there has been a growing interest in endocrine related toxic effects caused by chemicals both in organisms and humans. Such chemicals generally termed as endocrine disrupting chemicals (EDC) tend to interfere with endocrine system within the organism's body leading to various types of adverse effects ranging from cognitive disfunction [Bornehag et al., 2021; Lauretta et al., 2019; Graceli et al., 2020; Meeker, 2010; Kabir et al., 2015], attention deficit disorders, brain development, learning disabilities, other developmental defects to cancers. A typical endocrine disrupting chemical "interferes with the synthesis, secretion, transport, binding, action, or elimination of natural hormones in the body that are responsible for development, behavior, fertility, and maintenance of homeostasis (normal cell metabolism)" [Crisp et al., 1998]. Nursing mothers, foetus, babies, and infants are the most susceptible population to such endocrine related effects due to their under-developed and weak immune system. Unlike other toxicity endpoints the endocrine effects typically are caused at low to very low concentrations of chemicals. Chemicals that are typically classified as endocrine disruptors are found in a variety of industrial formulations including household cleaners, flame retardants, plasticizers, cosmetics, pesticides, pharmaceuticals and so on [Gore, 2016; Lubick, 2007]. India is a hub for manufacturing a variety of industrial chemicals as well as pharmaceuticals. Such chemicals tend to find their way into the surface waters through effluent discharge as well as household sewage. Due to weak regulations in India wastewater treatment plants frequently work at suboptimal efficiencies leading to discharge of untreated effluents into environmental waters such as river, lakes and oceans [Gori, 2007]. Consequently, this causes undue exposure of organisms, animals and humans to such chemicals. Many of these chemicals are lipophilic and tend to bioaccumulate in aquatic organisms such as fish that are consumed by larger fish and humans. Thus, endocrine chemicals tend to biomagnify in the food chain.

In this study we propose to build a list of select chemicals and classify them into one of the afore-referred chemical categories, study their known ED effects, determine their concentrations in different water matrices and assess their potential for exposure to humans and animals. For chemicals with limited ED data, we will be applying a variety of in silico models to obtain the missing data.

Materials and Methods

It is planned to select approximately 10-15 known endocrine disrupting chemicals. These chemicals would represent one or more of the above-mentioned categories e.g. flame retardants, plasticizers, pharmaceuticals, pesticides, cleaning products and cosmetics. As far as possible we plan to use reported endocrine effects data on these chemicals. In the absence of such data we plan to use in silico predictive models (e.g. VEGA) [Schneider et al., 2019]. We will also consider data from online resources. Sampling sites will be selected based on a priori knowledge of industrial effluent disposal, receiving natural waters, drinking water sources, water treatment plant and household drinking water. HPLC/GC MS will be used to determine concentration of specific chemicals in each water sample.

Results and Discussion

Based on the analytical results the prevailing concentration of potential ED chemicals in various water samples will be estimated. A graph of concentration of ED chemicals at various sites starting from industrial effluents, receiving water bodies, water treatment plant to household tap water will provide us with a rough estimate of how the concentration varies. This information in combination with endocrine toxicity data on each chemical will give us a risk estimate. This value will provide us with insight on the potential to cause endocrine effects on humans and organisms exposed to these chemicals. The key advantage of carrying out such a study is that it will provide us with a first-hand knowledge of presence of ED chemicals in our water bodies, their characteristics, their sources and their potential effects on Indian population. Based on this information we can recommend strategies to mitigate release of ED chemicals into the natural waters as well as create awareness among Indian population about the severity of EDCs and best practices to minimize their exposure. In addition, we plan to gather available spatial data on major diseases, population (e.g. sensitive) and nature of flora and fauna in the study area to determine if there is any correlation between ED chemical concentrations and diseases prevailing.

Conclusion

In this study we propose to build a list of select chemicals and classify them into one of the afore-referred chemical categories, study their known ED effects, determine their concentrations in different water matrices and assess their potential for exposure to humans and animals. For chemicals with limited ED data, we will be applying a variety of in silico models to obtain the missing data. The information obtained from this study will help assess the impacts of ED chemicals on human and environmental health. In addition, we will recommend strategies to minimize the exposure to ED chemicals thereby reducing endocrine effects.

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Prevalence of Keratinophilic Fungi from Different Soil Samples in Bilaspur (Chhattisgarh)

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Abstract

A total number of 50 soil samples were examined from Bilaspur city for the isolation and identification of keratinophilic fungi. Different sites were selected which include gardens, schools, poultry farms, hospitals and garbage dumping sites. A total of 21 species belonging to 10 genera were isolated and identified using hair bating technique. The fungi so isolated belongs to 5 species from genus Trichophyton, 4 species from Chrysosporium, 3 species each from Microsporum and Aspergillus, 2 species from Fusarium and one species from each of the following genera: Rhizopus, Alternaria, Trichoderma, Candida, Penicillium and Paecilomyces. The present study revealed that among the different sites selected the soil from gardens (64%) is rich in keratinophilic fungi followed by schools (50%), poultry farms (40%), garbage dumping sites (32%), and hospitals (28%).

Keywords: Keretinophilic fungi, prevalence hair- baiting technique and Bilaspur.

Introduction

Keratinophilic fungi are one of the nature's gifts which have the ability to decompose even the hardest substance like keratin. Keratineous material in or on soil are degraded by these fungi (biodegradation). In India lot of work has been done on distribution of keratinophilic fungi and related dermatophytes in the soil, which include the reports on isolation of fungi from soils of Jaipur and Mount Abu, (Garg, 1966), Mumbai, (Deshmukh, 1999), Chilka-Lake, (Ghosh and Bhatt, 2000) and Mussoorie, (Deshmukh et al., 2000), Damoh, (Khanam and Jain, 2002) and Mussoorie (Deshmukh and Agrawal, 1985). The keratinophilic fungi in India were isolated from various habitats viz., public parks and soils or floor dust of primary schools (Ramesh and Hilda, 1998), lake side soils (Ghosh and Bhatt, 2000), birds and their environment (Sur and Ghosh, 1980) and saltpans (Deshmukh, 2004).These soils become a potential source of infection for human beings (Marchisio, 1986; Matovani, 1978). Studies on the ecology and epidemiology of human dermatophytoses in the West Bank of Jordan (Al-Mussllam, 1989; Ali-Shtayeh and Arda, 1986) showed that about 36% of the patients with dermatophytoses were school children in the age group of 6-14. Studies of keratinophilic fungi are of considerable significance for their role in the breakdown of keratinous debris of man and animals in nature and they have a worldwide distribution (Al-Mussllam, 1989; Karam El-Din et al., 1996; Sur and Ghosh, 1980).

Geographically the climate of Bilaspur region is characterized by long and intense hot summer, and mild rainfall with short winter. The maximum temperature of 48°C has been recorded in the month of May. So far, no study has been conducted for isolation of keratinophilic fungi from Bilaspur city. Hence the present study reports the occurrence of keratinophilic fungi in this region.

Material and Method

During 2010, fifty soil samples were collected randomly from different sites viz., gardens, schools, poultry farms, hospitals and garbage dumping sites. The soil samples were collected from the depth not exceeding 3-5 cm. Soil samples were brought to the laboratory in sterile, tightly closed polythene bags for further processing. The modified hair-baiting technique of Vanbreuseghem (Vanbreuseghem, 1952) was employed to isolate keratinophilic fungi. Inoculation of soil sample in sterilized petriplates was done with the help of sterilized spatula in laminar flow. Whole experiment was conducted in aseptic chamber. Petriplates were half-filled with the soil samples, moistened with distilled water and baited with sterile human hair feather and nail. The plates were wrapped in papers, incubated at 28°C ±1 and examined for a period of 7-8 weeks at regular intervals for the

development of fungal growth on baited hair. After proper growth of fungi they were isolated and inoculated on Sabouraud's Dextrose Agar (SDA) medium supplemented with chloramphenicol 50 mg L^{-1} and streptomycin sulfate 100 mg L^{-1}. Petriplates were incubated for 3 weeks at 28°C and the developed colonies were send to the CMD College Bilaspur (C.G.) for identification of genera and species.

Result and discussion

The results of isolation of keratinophilic fungi are presented in Table 1, the data reveals that out of 50 soil samples so collected a total of 21 species of Keratinophilic fungi belonging to 10 genera were isolated. The maximum numbers of Keratinophilic fungi were isolated from soil samples of gardens (64%). Similar results were obtained by Chmel et al. (1972), who reported that garden soils with its high organic debris are rich sources of keratinophilic fungi. Next to gardens stand schools (50%), poultry (40%) and garbage dumping sites (32%) and hospitals (28%). 26.9% of keratiniphilic fungi were isolated from soil samples of poultry in Sindh, Pakistan (Soomro et al., 2007). The maximum number of keratinophilic fungi in the soil samples of gardens, schools, poultry, garbage dumping sites and hospitals may be attributed due to the excessive presence of hair (keratin) at these sites. In the present study most of the isolated keretinophilic fungi viz, species of chrysosporium, fusarium, aspergillus, alternaria and rhizopus are common saprophytes in soil and plant debris. The data present in the Table 2 reveals the percentage occurrence of keratinophilic fungi from different soil samples, among the isolated species the most predominant is Microsporum gypseum (59%). Microsporum gypseum has been isolated from five places out of six. This species was also reported as the second most common dermatophyte from soils of Madras and Mumbai (Deshmukh and Agrawal, 1983; Ramesh and Hilda, 1998). The other species of genus Microsporum which were found in less abundance are M. canis (%) and M. nanum (%). The second most common species isolated was **Aspergillus flavus** (%). **Aspergillus flavus** has also been previously reported as the second dominant species in soils of Gorgan (19.5%) and Gonbad-e Kavus (19%) areas in Iran (Moallaei et al., 2006).

Table 1: Isolation of Keratinophilic fungi from different places in Bilaspur (C.G.)

Fungi isolated	Gardens	Schools	Poultry	Rivers	Hospitals	Garbage sites
Microsporum gypseum	+	+	+	–	+	+
M. canis	+	–	–	–	+	–
M. nanum	–	+	–	+	–	+
Chrysosporium tropicum	+	+	+	–	–	–
C. anum	–	–	–	+	+	–
C. lobatum	–	+	–	+	–	–
C. indicum	+	–	–	–	+	–
Aspergillus flavus	+	+	–	–	–	+
A. niger	–	+	–	+	–	–
A. fumigatus	–	+	–	–	+	+
Tricophyton mentagrophytes	+	–	+	–	–	–
T. equinum	–	+	+	–	+	–
T. rubrum	+	–	–	–	–	–
T. ajelloi	–	+	–	–	–	+
T. interdigitale	+	–	+	–	–	–
Fusarium oxysporum	+	–	–	+	–	+
F. solani	+	+	–	–	–	–
Rhizopus stolonifer	+	–	+	–	+	–
Alternaria alternata	+	+	–	–	–	+
Trichoderma viride	+	–	+	–	–	–
Candida albicans	+	–	+	–	–	–
Penicillium fimiculosum	+	–	+	–	–	–
Paecilomyces fusisporuss	–	+	+	–	–	+
Total No. of species isolated	15	12	10	5	7	8
% of occurrence	65	52	43	21	30	34

+: Presence, -: Absence

Table 2: Frequency occurrence of keratinophilic fungi isolated from different soil samples in Bilaspur (C.G.)

Fungi isolated	Total No. of samples observed	No. of positive samples	Percentage value
Microsporum gypseum	54	32	59
M. canis	54	12	22
M. nanum	54	11	20
Chrysosporium tropicum	54	30	55
C. anum	54	8	14
C. lobatum	54	12	22
C. indicum	54	9	16
Aspergillus flavus	54	31	57
A. niger	54	10	18
A. fumigatus	54	13	24
Tricophyton mentagrophytes	54	12	22
T. equinum	54	16	29
T. rubrum	54	10	18
T. ajelloi	54	9	16
T. interdigitale	54	10	18
Fusarium oxysporum	54	15	27
F. solani	54	14	25
Rhizopus stolonifer	54	17	31
Alternaria alternata	54	14	25
Trichoderma viride	54	6	11
Candida albicans	54	8	14
Penicillium funiculosum	54	7	12
Paecilomyces fusisporuss	54	13	24

Chrysosporium tropicum (55%) was the third most abundant species. Chrysosporium species were also earlier reported from Indian soils (Deshmukh, 2004; Deshmukh and Agrawal, 1983; Kushwaha and Agrawal, 1976; Randhawa and Sandhu 1965; Sur and Ghosh, 1980). Chrysosporium species were previously recovered from many other countries (Al-Mussllam, 1989; Bagy and Abdel Malek, 1991; Van Oorschot, 1980; Al-Mussllam, 1989). In the present investigation genus Tricophyton is most predominant in terms of number of species. Five species of genus Tricophyton were isolated namely T. mentagrophytes (30%), T. equinum (20%), T. rubrum (18%) and T. interdigitale (20%). The other species which were isolated in the present investigation include Alternaria alternata (28%)Fusarium oxysporium(18%), F.solani (18%), Rhizopusstolonifer (28%), Candidaalbicans (16%),Trichoderma viride (12%), Penicillium funiculosum (14%).

The isolation of keratinophilic from different sites (Table 1) is not uniform this could be due to difference in the organic matter of the soil. Organic matter content of soil is one of the major factors affecting the presence of keratinophilic fungi in soil (Chmel et al., 1972). The present study reveals that soils of gardens, schools, poultry and garbage dumping sites are rich in keratinophilic fungi.

The data adds the information on the flora of keratinophilic fungi of India. Although, the study of keratinophilic fungi is a challenging task we have put our efforts to isolate keratinophilic fungi from few places of Bilaspur.

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Acute Effect of Mercuric Chloride Exposure in the Freshwater Fish Gambusia Affinis.

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ABSTRACT-

The toxic effect of Mercury on freshwater fish gambusia affinis was studied. The LC50 values of mercury in gambusia affinis for 24, 48, 72 and 96 hours were 0.73, 0.69, 0.63 and 0.58 ppm respectively. Gambusia affinis fish was silvery white in body in the control group throughout the experiment. The body colour changed from original silvery white to dark colour in heavy metal treated fish. The fish maintained in freshwater behaved normal as usual. But when the fish was exposed to mercury, erratic swimming, abnormal posture, dis-balance, sluggishness, imbalance in posture, increase in surface activity, opercular movement, gradual loss of equilibrium and spreading of excess of mucus all over the surface of the body were observed.

Keywords: gambusia affinis, Acute Toxicity, Mercury, LC50, Behaviour.

INTRODUCTION

Pollution is the result of the environment's negative feedback on living creatures. The aquatic ecosystem is not immune to pollution's negative impacts. Recently, there has been a surge of interest. Rivers and estuaries were chosen because they are major sources of pollutants in coastal oceans. As well as oceans Humans are to blame for marine contamination because they introduced new species. Hazardous waste compounds into the maritime environment, either directly or indirectly Rivers and estuaries have not been spared, resulting in negative consequences that have paved the path for health risks. relating to humans [1] Industrialization, agricultural intensification, and fast population expansion. The growing population has resulted in an increase in the discharge of pollutants that are hazardous to the biotopes mentioned above. There are four major types of contaminants that endanger marine environmental resources: Heavy metals, radionucleotides, petroleum hydrocarbons, insecticides, and radionucleotides . Heavy metals are the most harmful of them because of their biological stability. In a metal-contaminated environment, If the water is to be utilised for drinking, the stream may pose a threat to public health. As well as for other uses, In recent years, there has been a growing concern about the consequences of various technologies. Surface runoff from rain or other sources can deposit heavy metals in freshwater habitats. Rapid Heavy metals, such as mercury, have become more widely used as a result of industrialization and urbanisation. A bigger picture These metals end up in aquatic habitats either directly or indirectly as effluents. Metal traces have a significant attraction to biological creatures in general, and the sluggish adaptation of these organisms Chemicals in biological systems have accumulated in bodily tissues, resulting in cancer. A number of body functions are stimulated, irritated, and inhibited. Currently, there is more food available. The creation of energy to suit the needs of an ever-increasing population is a big issue. This is our country. Man has used contemporary agricultural and industrial practices to address these needs. As well as industrial production However, the population increase poses a significant threat to the environment. Society is a whole. Organisms that live in marine, estuarine, and freshwater settings are diverse. As a result of industrialization and current farming practises, people are exposed to dangerous quantities of heavy metal pollution. Iron, copper, manganese, magnesium, and zinc are some of the most important heavy metals. At ideal quantities [2], however if the concentrations of these as metals accumulate in the environment, they have the potential to disrupt organisms' metabolic processes. Toxic to aquatic species are the non-essential metals mercury, cadmium, silver, and lead. Even at very low quantities, it has the ability to cause cancer. In enterprises, agriculture, and the military, mercury is widely used. It is the most poisonous of the heavy metals, with uses in electronics, medicine, and dentistry. By quick diffusion and tight binding, mercury released into the environment can enter the food chain. Methyl mercury is the most common form of mercury found in proteins. Mercury has the power to cause cancer in any chemical form. Proteins are

denatured, enzymes are inactivated, and severe health problems are caused. The heavy metal contaminations result in epidemic diseases such as "Minamata" [7], "Itai-Itai" [8] etc. Among the non-essential metals, arsenic, mercury, cadmium, lead and silver, poses serious threat [9]. They have many sources to reach the coastal system [10]. The human destructive influence on the aquatic environment is in the form of sub lethal pollution which results in chronic stress conditions that have negative effect on aquatic life. The main source of freshwater pollution can be attributed to the discharge of untreated waste, the dumping of industrial effluent and the run-off from the agricultural fields. Mercury pollution in aquatic ecosystems has received a great deal of attention since the discovery of mercury as the cause of Minimata disease in Japan in the 1950s [11]. The fate of mercury in the environment depends on the chemical form of mercury released and the environmental conditions. The elemental mercury, the inorganic mercury and the methyl-mercury are the three most important forms of mercury in natural aquatic environments. Most mercury is released into the environment as inorganic mercury, which is primarily bound to particulates and organic substances and might not be available for direct uptake by aquatic organisms [12]. Toxicity is influenced by the form of mercury, environmental media, environmental conditions, sensitivity or tolerance of the organism, and its life history stage. The inorganic mercury is less acutely toxic to aquatic organisms than methyl-mercury, but the range in sensitivity among individual species for either compound is large. The undesirable effects of heavy metals and other toxic elements has long been recognized for creating havoc in the aquatic and terrestrial environments. Acute poisoning of aquatic environment leading to ravages of lives occurs from either the occasional industrial and haulage accidents or during routine dumping and unconscious leaching practices. Long term exposure to heavy metals and toxic elements has cataclysmic implications to our environment. It may prove to be hazardous and chronic to the animals living in water or associate with it either directly or in a roundabout way. Indeed, the presence of certain metals like iron, copper, cobalt, calcium and zinc at certain level in their exploitable forms is essential for life as a source of minerals. The mere presence of metals does not constitute a major threat to fisheries and other aquatic animals' health. But certain metals for instance, mercury, cadmium, silver, lead and arsenic have no nutritive value and are critically idiom as environmental contaminants. With this in view an attempt has been made in the present study to investigate the toxicity impact of heavy metal mercury on Gambusia affinis since very little information is available in this important edible freshwater fish.

MATERIALS AND METHODS –

The freshwater healthy fish, Gambusia affinis of the weight (8±1g) and length (7 selected for the experiment and were collected from Ponds in and around Adirampattinam. Fish were screened for any pathogenic infections. Glass aquaria was washed with 1% KMnO4 to avoid fungal contamination and then sun dried. Healthy fishes were then transferred to glass aquaria 2°C; total hardness – 518±20 cm) containing dechlorinated tap water (Temperature – 28 ×20×(35 0.04). Fish were acclimated± 0.13 ppt and pH - 7.8 ± 0.2 mg/l; salinity - 1.2 ± 23 mg/l; DO - 5.6 ± to laboratory conditions for 10 to 15 days prior to experimentation. They were regularly fed with commercial food ad labium and the medium (tap water) was changed daily to remove faeces and food remnants.

Metal for toxicity studies (Mercury) Toxicity studies were conducted to obtain reliable data regarding the effects of the toxicant on the test species. Static bioassay tests were conducted as per standards set by the American Public Health Association [13]. The toxicant sample used possessed the following characteristics.

Acute toxicity test-

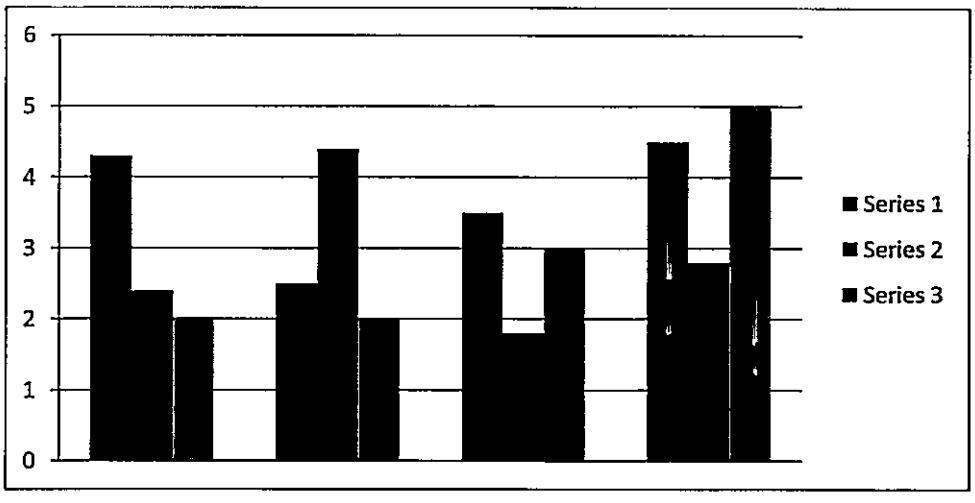
Toxicity tests were conducted in accordance with standard methods [14]. Stock solution of mercury with a concentration of 1 g per litre (equivalent to 1 ppt) was prepared in distilled water and different dilutions were prepared by adding required amount of distilled water. Based on the progressive bisection of intervals on a logarithmic scale, log concentrations were fixed after conducting the range finding test. The fish were starved for 24 hours prior to their use in the experiments as recommended by storage to avoid any interference in the toxicity of the heavy metal mercury by excretory products. After the addition of the toxicant into the test tank with 10 litres of water having twenty fish, mortality was recorded after 24, 48, 72 and 96 hours. Five replicates were maintained simultaneously. Percent mortality was calculated and the values were transferred into probit scale.

Probit analysis was carried out as suggested by Finney [15]. Regression lines of probit against logarithmic transformations of concentrations were made. Confidential limits (upper and lower) of the regression line with chi-square test were calculated by a computerized programme for Finney's [15] probit analysis.

RESULTS AND DISCUSSION- Mercury caused 50% mortality of Gambusia affinis (96 hours) at 0.002 ppm. The LC50 values obtained at 24, 48, 72 and 96 hours exposures and the 95% confidence limits for the heavy metal revealed that mercury showed higher toxicity. The LC50 values of mercury for 24, 48, 72 and 96 hours were 2.0, 1.5, 1.0 and 0.002 ppm respectively (Table 1).

S. No	Concentration Of Dose(Ppm)	Hour death rate
1	2.0	-
2	1.5	-
3	0.05	LC_{50}
4	0.002	Survive Long Time(24 Hour)

GRAPH SHOWING DIFFERENT DOSES-



Gambusia affinis was silvery white in body in the control group throughout the experiment. The body colour changed from original silvery white to dark colour in heavy metal treated fish. The fish maintained in freshwater behaved normal as usual. But when the fish was exposed to mercury, erratic swimming, abnormal posture, disbalance, sluggishness, imbalance in posture, increase in surface activity, opercular movement, gradual loss of equilibrium and spreading of excess of mucus all over the surface of the body were observed. A survey of LC50 values of different heavy metals to the fish for different periods of exposure reveals the occurrence of a wide differences between duration of exposure and types of fishes [16,17,18,19,20,21,22,23,24,25]. Changes in body colour have been reported in Anabas testudineus after exposure to monocrotophos [23], and Cyprinus carpio to ammonia stress [26]. The behavioural changes are considered directly related to complex physiological responses and have often been used as a sensitive indicator of stress [27]. Tilapia fish exposed to sub lethal concentrations of mercury settled immediately at the bottom of the aquarium. The shoal was disturbed in the first day itself. Fish occupied larger area than to that of control group. They were spread and found swimming independently. Irregular, erratic and darting movements with imbalanced swimming activity and attempt to jump out of the toxic medium were observed. Similar behaviour patterns were observed in fish, trout and L. rohita exposed to fenvelrate [28]. Increased opercular movements, loss of equilibrium, erratic swimming and jerky movement and mucous secretion all over the body were observed in Heteropneustes fossilis after exposure to rogor and endosulphan pesticides [29]. Erratic swimming, imbalance in posture, increased surfacing activity with gradual decrease in opercular movement, loss in equilibrium, excess of mucus all over the body surface followed by sluggishness and death of A. testudineus after exposure to monocrotophos was reported by [23]. Surfacing phenomenon was also seen on

second day. On third day swimming behaviour was in cork-screw pattern rotating along horizontal axis. Fish on fourth day showed signs of tiredness and lost positive rheotaxis characterized by weakness and apathy. Fish frequently came to water surface. Similar trend has observed in Gambusia affinis exposed to endosulfan [30]. Finally fish turned upside down and dead. Fish in sublethal concentrations were found under stress but that was not fatal. The settlement of the fish to the bottom of the tank on addition of endosulfan reveals the avoidance behaviour of fish as observed in trout and tilapia by Murthy [28] and Devi Swetharanyam [30]. Shivakumar et al. [31] also observed the avoidance behaviour in Ctenopharyngodon idellus on exposure to endosulfan. Irregular and erratic swimming indicates loss of equilibrium [30]. This must be due to the damage caused at the centre associated with the maintenance of equilibrium in the brain [32]. Many workers have observed erratic swimming, equilibrium loss and surfacing phenomenon in the fish following pesticide exposure. Surfacing phenomenon shown by the fish might be to gulp maximum possible air to ease the tension. Rao and Rao [32] also observed this phenomenon in the fish, Channa punctatus exposed to two different pesticides viz., carbaryl and phenthoate. In relation to this they also reported that the surfacing phenomenon was due to hypoxic condition of the fish. Increased opercular movements were seen in the fish, Gambusia affinis exposed to mercury, which was in accordance to the report put forth by Amitakiran and Jha [33] in Clarias batrachus exposed to herbicide, herboclin. The rapid opercular movements may be due to accumulation of mucous over gill due to the toxicant [21,34]. Similar findings were observed by Prasanth et al. [35], when freshwater fish C. mrigala exposed to cypermenthrin. The fish Gambusia affinis exhibited irregular, erratic darting movements with imbalanced swimming activity. Occasionally the fish tried to jump out of the toxic medium, which shows the avoidance behaviour of the fish to the toxicant. Similar behavioural patterns were observed in L. rohita exposed to endosulfan [31]. The change of body colour, behavioural changes such as irregular swimming movements, loss of equilibrium, restlessness and excess secretion of mucous suggest that Gambusia affinis has undergone chemical stress when exposed to heavy metals and the present study could be taken as an indicator of heavy metals pollution. The changes in the swimming behaviour and the opercular movements were more obvious in fishes subjected to prolonged exposure period at the acute concentration level while it was not so pronounced at the sub-lethal concentration. The impaired equilibrium observed in the present study concurs with the results obtained in the fresh water fishes. Barbus aurilus and Lepidocephalecthyes quntea exposed to lead, mercury, copper and zinc [36]. It was also noticed that the swimming activity of the mercuric chloride exposed fish significantly decreased. The increased opercular movements are inversely proportional to the decreased swimming activity. Increased opercular movements have been observed in Gambusia affinis exposed to mercuric chloride [37]. Similar observations were made in several fishes viz., Stickle backs [38], Minnows [39] and Salmo gairdneri [40]. Preliminary range finding and screening tests have been made for establishing the water quality and also to serve as a baseline study for 96 hr sub-lethal and median-lethal exposure in toxicological investigations. Limited data are available on the relative toxicity of mercury compounds to aquatic organisms. Jackim et al., [41] and Klavnig et al., [42] reported acute toxicity levels during 96 hr. of exposure. The LC50 values for mercuric chloride toxicity in Fundulus heteroclitus were reported as 230 and 201 µg/l respectively. Portmann [43] obtained a 48 hr. LC50 value as 3.3 ppm of mercury for the fish Pleuronectes flesus. Saxena et al. [44] reported LC50 values at 24 hr with mercuric chloride for Danio malbaricus and Puntius ticto 2 mg/l and 0.30 mg/l respectively. Dhanekar et al, [45] obtained LC50 values at 96 hr mercuric chloride exposure for Puntius sophore, Labistes reticulates, Sarotherodon mossambicus, Channa punctatus and Heteropneustes fossilis as 0.15 mg/l, 0.25 mg/l, 0.50 mg/l, 1.0 mg/l and 1.0 mg/l respectively. Since the publication of the standard bioassay procedures [46,47,48,49], there have been a multitude of tests developed by researchers for evaluating or measuring toxicity using various organisms living in different environments and representing different levels in the food chain [14]. It is well known that toxicity will depend upon (a) the chemical form of the metal (b) the presence of other metals (c) the physiological status of the organisms and (d) the environmental, physico-chemical parameters like temperature, dissolved oxygen and the pH of the water. The toxicity of the metal is also dependent upon the residence time of the metal concerned. Generally most metals have long residence timers and hence, exert their toxic effects over long periods.

CONCLUSION -

The LC50 can be used as a relative measure to study the impact of the heavy metal concentration on test fishes at different intervals. This toxicity test on the effect of mercury on Gambusia affinis offers a rapid method for assessing the heavy metal impact on this fish. This type of preliminary investigations can be useful for deriving the safe level of heavy metal concentration (especially mercury) that can be released into the aquatic environments.

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A Review on Mushroom as Less Explored Nutritional and Medicinal Source

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Abstract

A review on the use of mushroom as medicine and food was conducted with the idea to encourage its production and incline people towards its nutritional properties for the well being of the people. Mushrooms have rich nutritional value with high content of proteins, vitamins, fibers, minerals trace elements and minimum or no calories and cholesterol, which can be of direct benefit to the human health. Mushrooms also enhance human's immune systems.

Keywords: Mushrooms, Nutraceuticals, Medicine, Nutritional and Inflammatory.

Introduction:

Mushrooms are the fruiting bodies of few fungal species and in nature it plays very important role in breakdown of leaves, wood, and organic matter and simplification of complex to simpler component. This contributes a lot in the cyclic turnover of elements of forest ecosystem. It's been said that 'Medicines and foods have a common origin', mushroom fits well with this saying. It is both, a nutritionally functional food as well as a source of physiologically advantageous medicine. Several centuries ago, mushrooms have been considered as a special category of Nutraceuticals, they have received a noteworthy attention in recent decades. Major medicinal characteristics credited to mushrooms include anti-diabetic activity, antibiotic activity, antiviral activity, anticancer activity, immune response-stimulating effects, anti-hypersensitive and blood lipid lowering effects [37, 36]. In recent years, the extracts of mushrooms have been commercialized due to their anticancer and immunity enhancement properties.

A variety of mushrooms are there belonging to the order of Basidomyecets or Ascomycetes. Basidomyecets or Ascomycetes can be found everywhere in soils rich in organic matter and humus, moist wood, animals waste after heavy rain or a sudden change of temperature and soon after a few hours or day's they disappear, leaving no sign but, mycelium [1].Mushrooms are medicinal foods that are rich in nutrition that recognized by medical professions through the world. Mushrooms have eight important amino acids, polyunsaturated fatty acids and small amounts of saturated fatty acids and have higher nutritional medicinal values than fish or beef [5].Mushrooms have been found effective against cancer, cholesterol reduction, stress, insomnia, asthma, allergies and diabetes [35].

Food

Mushrooms have a unique texture have good aroma, taste and flavor that differs mushroom from other food crops [7]. Edible species of mushrooms found abundantly in indigenous forests are; Macrolepiota, Auricularia, Armillaria, Pholiota, and Coprinus. Several species of Macrolepiota and Agaricus are well known in highland grazing areas. Mushrooms found in exotic plantations such as pinus and cupressus remain unknown to the local people and are not collected for use. The most common poisonous mushroom is Chlorophyllummolybidites, a mushroom similar to other edible members of the Agaricacea and is difficult for local people to differentiate from edible one [3].

Mushrooms are highly nutritive, low-calorie food with good quality proteins, vitamins and minerals. Mushrooms are an important natural source of foods and medicines. By virtue of having high fiber, low fat and low starch, edible mushrooms have been considered to be ideal food for obese persons and for diabetics to prevent

hyperglycemia. They are also known to possess promising anti oxidative, cardiovascular, hypercholesterolemia, antimicrobial, hepato-protective and anticancer effects [8].

As report of Barros et al. [9], more than 3000 mushrooms are mainly edible species but, only 100 species are cultivated commercially, and only ten species are used at industrial scale and their global and economic value is now increasing slowly due to increase in their value as a food as well as their medicinal and nutritional values.

Nutritional composition of mushroom

Carbohydrate

The carbohydrate content of mushrooms represents the bulk of fruiting bodies accounting for 50 to 65% on dry weight basis. Free sugars amount to about 11%. Florezak et al. [10] reported that Coprinus atramentarius contain 24% of carbohydrate on dry weight basis. The mannitol, also called as mushroom sugar constitutes about 80% of the total free sugars, hence it is dominant [11]. Singh NB and Singh P [12] reported that, a fresh mushroom contains 0.9% mannitol, 0.28% reducing sugar, 0.59% glycogen and 0.91% hemicellose. Carbohydrates of Agaricus bisporus are raffinose, sucrose, glucose, fructose and xylose are dominant in it.

Protein

Protein is an important constituent of dry matter of mushrooms. Protein content of mushrooms depends on the composition of the substratum, size of pileus, harvest time and species of mushrooms [13]. Protein content of the mushrooms has also been reported to vary from flush to flush. Protein in A.bisporus mycelium ranged from 32 to 42% on the dry weight basis. Mushrooms in general have higher protein content than most other vegetables and most of the wild plants 14.71 to 17.37% and 15.20 to 18.87% protein in the fruiting bodies of Lactariousdeliciosus and Lactarioussanguiffus respectively. Mushrooms contain all the essential amino acids required by an adult [14].

Fats

Fat constituent in mushroom is not high when compared with carbohydrates and proteins. The fats present in mushroom fruiting bodies are mostly unsaturated fatty acids. Fat content of mushroom is different in different species that 2.04% in Suillusgranulatus but 3.66% in Suillus luteus and 2.32% in A. campestris. Mushrooms are rich in linolenic acid, which is an essential fatty acid. Mushrooms are considered good source of fats and minerals Fat fraction in mushrooms is mainly composed of unsaturated fatty acids [15,16].

Vitamins

Mushrooms are one of the best sources of vitamins especially; wild mushrooms contain much higher amounts of vitamin D2 than dark cultivated Agaricus bisporus. Mushrooms also contain vitamin B-complex and vitamin C in small amounts, but they are poor in vitamins A, D, and E [17].

Mineral constituents

Mushrooms are characterized by containing high-level mineral elements that are essential for human health. Major mineral constituents in mushrooms are K, P, Na, Ca, Mg and elements like Cu, Zn, Fe, Mo, Cd form minor. Mushrooms have ability to accumulate heavy metals like Cd, Pb, Ar, Cu, Ni, Ag, Cr and Hg [18]. The mineral contents of mushroom are based on species, age and the diameter of the fruiting body of that mushroom. It also depends upon the type of the substratum that is supplied for mushroom cultivation. The mineral content of wild edible mushrooms is higher than cultivated ones [19].

Medicine

Mushrooms are not merely sources of nutrients but also as therapeutic foods, helpful in preventing diseases such as hypertension, diabetes, hypercholesterolemia and cancer. This functional uniqueness of mushrooms is mainly

due to the presence of dietary fiber and specifically chitin and beta glucans. Some mushrooms species have antitumor, antiviral, and antithrombotic and immunomodulating properties and some mushrooms may have potential to decline elevated blood sugar levels [39,38].

S.No.	Mushroom Species	Medicinal Value
01.	Volvariellavolvacea	Reducing blood pressure
02.	Pleurotusostreatus	Relaxing muscles, joint pains, antitumourous activity
03.	Agaricus brunnescens (Syn. A. bisporus)	Stimulating digestion, curing hypertention, hyperacidity,obesity, constipation and Atherosclerosis (fat deposition inside the blood vessel)
04.	Morchella esculents	Anti-inflammatory activity
05.	Ganoderma lucidum	Boosts the immune system, Increasesbrain power, Improves blood circulation, Reduces allergies and inflammations
06.	Lentinus polychrous	Dyspepsia
07.	Agaricus blazei	Hyperlipidemia, arteriosclerosis, diabetes, chronic hepatitis , cancer
08.	Lentinus tuberregion	Inhibition in the proliferation of solid tumor
09.	Lentinula edodes	Suppression of cell proliferation in leukemia
10.	Sclerotinia sclerotiorum	Antitumor activity

Antitumor Agents

Four mushrooms, Lentinus (Lentinula) edodes, Schizophyllum commune, Grifolafrondosa, and Sclerotinia sclerotiorum, particularly their respective β-glucans, lentinan, schizophyllan (also called SPG, sonifilan, or sizofiran), grifolan, and SSG are known for antitumoral activity. Most of the β-(1-6)- branched β-(1-3)-linked glucans, are able to act as antitumor activity [29]. Pleurotusrimosus produces ethyl acetate, methanol and aqueous that inhibit the Dalton's Lymphoma Ascites (DLA) cell line induced solid tumor and EAC cell line induced ascites tumor in mice whereas the antitumor effect is high in ethyl acetate extract than the other extracts. Antitumor activity of G. lucidum is again used by [30] through the EAC cell line induced solid tumor model in mice, extracts of methanol and aqueous give significant antitumor properties by inhibiting the tumor development. Polysaccharides extracted from mycelium and fruiting bodies of L. tuberregium effectively inhibited solid tumor proliferation in mice [31].

Anti-inflammatory

Extracted ethanol from cultured mycelium of M. esculents is well known for its anti-inflammatory activity and is important but based on dose to inhibit both acute and chronic inflammation in mice model that is comparable to the standard Diclofenac. The acute and chronic anti-inflammatory activities of ethyl acetate and methanolic extracts from G. lucidum are expressed [30] through carrageen an induced acute and formalin induced chronic

inflammatory models in mice. Chloroform that can extract from G. lucidum is significant anti-inflammatory activity [32].

Antioxidant

Oxidation is essential in many living organisms for the production of energy to fuel biological processes. However, uncontrolled production of oxygen-derived free radicals results in the onset of many diseases, such as cancer, rheumatoid arthritis and atherosclerosis, as well as in degenerative processes associated with aging [33]. Ethyl acetate, methanol and aqueous extract of G. lucidum are highly inhibit O2· and ·OH radicals, but aqueous extract cannot inhibit ferrous ion induced lipid peroxidation whereas ethanol extracts of the mycelium of G. lucidum is high as antiperoxidative activity [34].

Conclusion:

Though mushrooms are very common among people and in nature as well, but systematic identification, mass production and efficient consumption is a constant challenge. Its low shelf life is one of the major constraints. Secondly there is a myth especially in the Indian society that considers mushroom as non vegetarian food. Moreover it is sold in market as random forest local collection and many people fear it, being poisonous. Here it becomes very relevant to mention that major part of society is suffering from nutritional deficiencies and that they must be encouraged to include mushrooms as a part of their regular food component. Secondly if its medicinal properties is to be explored then its cost effective mass production must be encouraged and to be properly channelized in the bulk market.

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Third Gender Rights Past and Present

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Maintaining the existence of transgender communities has always been a big challenge. From this point of view, it has been a strange subject. The need of the hour is to do more and more thorough and meaningful research on their needs and their rights. However, in the last few decades some welfare-oriented attitude towards transgenders has developed in India. This article is only a small attempt to highlight the economic changes coming in the condition of transgenders at present.

Our society has been standing on two pillars since ancient times, man and woman. But in our society, apart from these two, there is also existence of third person who has always been marginalized, he is neither a woman nor a man. Whom people address by names like hijra, kinnar etc.

"In the constitution, they have been identified as Intersex, Transgender and Transsexual." 1.

There is a reference to the origin of eunuchs in the mythological tales. It is mentioned in the Ayodhya Kand of Ramayana at the time of Lord Rama's departure to the forest. When Lord Rama was going to exile, the people of the city go to see him off. Then Lord Ram gives a message to all the men and women to go back. But as there was no clear order for the eunuchs, those eunuchs decided to stay in Chitrakoot for 14 years and wait for the return of Lord Rama. And when Lord Ram was coming back to Ayodhya after completing his exile, Lord Ram asked the reason for the eunuchs staying there, then he said that when we came here to celebrate you with Bharat. So, you had said that – jatha jogu hun kari vinay pranaam beeda kiye sab Sanuj Rama. Naari- purush ladhu Madhya badere sab sanmani kripanidhi phere. 2

Here a natural question arises that what was the utility or need of the transgender community in the civilized civilizations and cultures recorded in history from mythological times?

In this context, the selfless and immovable expressions of the eunuchs come to the fore. Impressed by this, Lord Rama blesses them that those whom you bless will not be harmed. The presence of this community is also found in the Mahabharata period, Shikhandi has been accepted as 'Third Gender'. During his exile, Arjuna also lived as Brihanla. From the social point of view, their position in the Mughal period was better than the present. They were kept on government jobs to guard the palaces and havelis in the houses of kings and nawabs. Along with this, he also used to do the work of spying for the kings. At this time, he held high positions in many places. One of them, Malik Kafur, the commander of Alauddin Khilji, is notable.

"This community emerged during the Mughal period with its rich historical image. As Gayatri Reddy writes, the Hijra community lived a dignified life in a monarchy under the Islamic Empire in medieval India. The name of General Malik Kafur, the head of Alauddin Khilji, who ruled Delhi in history, comes to the fore. Malik Kafur was a very powerful army hero who was a eunuch."3

From the Mahabharata period to the Mughal period, eunuchs had a special place in the palaces. At the end of the Mughal period, their political, social and economic status started changing.

During the British rule, they were viewed with suspicion. In 1871, the then British government brought the Criminal Tribes Act or the Geriatric Offenses Act. In which many restrictions were imposed on them. In the year 1897, while amending these, keeping them in the category of criminals, a separate register was asked to be prepared to keep an eye on their activities. Their acts were declared non-bailable offenses under Section 377. 4

The transgender we are discussing have been a feudal in character and later on have been carrying on with capitalist characteristics.

Their status did not change significantly in independent India, but they were removed from the list of criminal tribes. No change has been made in section 377. Human rights were continuously demanded by this society.

In this context, the statement of Raveena Bariha is noteworthy, "We have prescribed two or three things. Equality of education, livelihood, equal access to justice and advancement in economic opportunities are some of the Acts which should be brought in all the states." 5

After awareness in this community, their condition started to change. In the last few years, some effective efforts have been made to bring transgenders into the mainstream of the society, initially-

- ❖ Radio taxi service was started in Mumbai so that their financial condition could be improved.
- ❖ The effort made by Indira Gandhi National Open University is commendable, in which free admission has been arranged for transgender students.
- ❖ The literary world has made good efforts for transgender discussion.
- ❖ Empowerment is required for development in any society, education is an important medium in empowerment, which is lacking in this society. Since 2009, there has been a continuous change in the status of the transgender society. Many eunuchs are leading a normal life after getting education, such as Sadhna Kinnar of Orissa, after getting a bachelor's degree in Social Work and Business Administration, is appointed as Social Development Officer in Kalinga Institute of Social Science.
- ❖ 23 transgenders got appointment in Kerala's Kochi Metro. Transgenders were given employment. This is the first metro service in the country in which transgenders have been given employment.

A collaboration of Bollywood film 'Hansa' which is based on the lives of eunuchs. In which Kinnar Muskan of Ambikapur got an opportunity to work. This film describes the condition of Transgenders. The aim of the film is an effort in this direction to enable this class to get a respectable position in the society.
The year 2014 brought a good message for transgenders. In April 2014, the Supreme Court decided to recognize transgenders as "third gender". The state governments were directed by the Supreme Court to take steps to relieve these people from problems like fear, shame, and stigma by creating social pressure.
"A separate bill was brought in the House for the rights of transgenders The Rights of Transgenders Bill 2014 was introduced by Tiruchi Siva of DMK. He had said that transgenders in 29 major democracies including the US, Canada, UK, Italy, Australia and Singapore. Laws have been made to protect the rights. On this private bill of transgenders, the Leader of the House, Arun Jaitley, appealed to the government to pass the bill unanimously, saying that if this was not done, then the House would be divided on this subject. The message will be sent to it. Later the House passed it unanimously."6
According to the decision taken in the year 2014, the Election Commission has arranged that transgender will no longer have the compulsion to write male or female as their gender. Now transgender voters can write "other" in place of gender. With this, now voters registered as others will also be able to vote and contest elections.

The culmination of the demand made by this community is before us in the form of the Transgender Persons (Protection of Rights) Bill 2019 - which has been made by the Ministry of Social Justice and Welfare. Social Justice and Empowerment Minister Thaawarchand Gehlot introduced the Transgender Persons (Protection of Rights) Bill 2019 in Lok Sabha on 19 July 2019. The Bill defines a transgender person as a "transgender person whose gender does not match the gender assigned at birth. This includes transmen (trans-male) and trans women (trans-female) intersex variations gender queer. It also includes persons with socio-cultural identities such as eunuchs, hijras. The definition of intersex persons includes those who at birth exhibit differences in their main sexual characteristics, external genital chromosomes, or hormones from the normative standards of the male or female body." 10

A good example of this is the Suhagpur assembly constituency of Madhya Pradesh. From here, the first transgender known as Shabnam Mausi, while expressing happiness on his victory, said that the Election Commission has done a commendable job by recognizing a society which has been a victim of disdain and discrimination for centuries. The eunuchs have decided that they will request the Social Welfare Department to provide them the funds that the government gives for them under the schemes being run for the economically backward families. At the same time, Shabnam Mausi demanded reservation for Kinnar Samaj in Lok Sabha and Vidhan Sabha, which is one of the biggest demands of this society till date.

On 15 April, the Supreme Court gave a historic verdict, by this decision the Kinnar society got a new identity. The decision given by the court directed to create a column for "third gender" along with men and women in

official documents. Along with the facilities which are available to the backward classes in the Central Government, State Government and Union Territories. He said that this class should also be provided to them in educational institutions and jobs and also directed to provide them the benefit of reservation to "Other Backward Classes".

"A division bench of K S Radhakrishnan and A K Sikri, in its decision, has talked about giving all the judicial and constitutional rights to the Hijra community, which are available to the common citizens of the country".7 On this decision, Lakshmi Narayan Tripathi, president of the NGO 'Astitva' and transgender of the LGBT community, got emotional and said – "I was staring a lot of eyes when I was entering the court before the verdict. But when I came out with this decision, I wasn't even bothered by those staring eyes. Because now I have all those immense rights in my hands. Which I have been waiting for a long time."8

This statement of Lakshmi Narayan Tripathi is also noteworthy - "Only the doors of applause, begging and doing prostitution were open for us. If the government really wants to end corruption, then start taking us in jobs. We can't be corrupt because we don't live in family system. From the time of monarchy till today, hoarding is in our nature. The trend is not flourishing."9

It has been arranged in this bill to remove the discrimination being done with their marginalized and to connect them with the mainstream of the society - Prohibition of Discrimination - "The bill prohibits discrimination against transgender persons. Including denial of service delivery or unfair treatment in respect of – 1) education, 2) employment,

3) health service, 4) access to and use of facilities and opportunities available at public level, 5) right of movement, 6) Right to reside, rent, own or take possession of any property, 7) Opportunity to hold public or private office and 8) Access to any public or private establishment maintained or supervised by a transgender person Is."11

In order to upgrade this economically backward society, the provision of employment has also been made in this bill - "No government or private institution can discriminate against a transgender person in matters related to employment such as recruitment, promotion etc. If more than one person is employed, he is expected to direct the Grievance Redressal Officer to deal with the complaints received under the Act."12 This is a big step in the direction of employment potential.

Health care provisions for providing health facilities to this class are mentioned in this bill - such as "Government shall take steps to provide health services to transgender persons. Including separate HIV surveillance centers, sex reassignment surgery. The government is concerned with the health of transgender persons." Review the medical curriculum to address the issues involved and provide them all medical insurance plans."14 This proved to be a revolutionary work in the direction of health. Provision has also been made for this category of identity - "A transgender person can apply to the District Magistrate to be issued a certificate relating to his identity as a transgender. The amended certificate can be obtained only if the person has acquired a male identity." Or have surgery to change your gender as a woman."15

The welfare measures that have been adopted by the government for this class. It is mentioned in this bill- "The concerned government shall take steps to ensure full inclusion and participation of transgender persons in the society. It shall take steps for the rescue and rehabilitation of transgender persons and for vocational training and self-employment. Transgender sensitive schemes." and promote their participation in cultural activities." 16

In order to protect the interests of this class neglected for centuries, the provision which has been kept in the bill to keep them free from exploitation- The bill recognizes the following as offenses -

1) Forced transgender persons to beg or do bonded labor (in this public purpose Does not include compulsory government service for)

2) Preventing them from using public places.

3) Preventing them from residing in the family, village etc. and

4) Harassing them physically, sexually, verbally and financially. The punishment for these offenses ranges from six months to two years and may also attract fine." 17

National Transgender Council (NCT) has been constituted to make policies, legislations and plans related to this category and to supervise them and to give suggestions and redress their grievances. The main office bearers of the council will be -

1) Union Minister of Social Justice (Chairman)
2) Minister of State for Social Justice (Co-Chairman)

3) Secretaries of the Ministry of Social Justice and
4) Representatives of Ministries related to Health, Home Affairs, Housing, Human Resources. Other members will include representatives from NITI Aayog, National Human Rights Commission. State government will also be given representation.

Apart from this, the council will also include 5 members from the transgender community and 5 experts from NGOs." 18

This bill has been made keeping in mind the all-round development of transgenders. Efforts need to be made by the entire society to take them forward.

Constitutionally in India, the decision of the Delhi High Court has to be implemented. It is here that the role of the Human Rights Commission becomes important. How to implement this decision on the practical ground so that by increasing the self-confidence of eunuchs, making their personality fear free and inculcating in them the desire to live life in a holistic way so that the neglected community for centuries whose population is estimated to be 490,000 according to the 2011 census. It has been imposed so that they can be connected with the mainstream of the society. They can live their life like ordinary citizens. Finally, I would like to repeat this example from 'The Cambridge Modern History is its Origin' Authorship and Production 1907 pages 10-12 - "We cannot write the last history in our generation, but we can cancel traditional history and both the middle can show the point of progress where we can reach. All the information is in our hands and every problem is ready to be solved."

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Feminist Writing

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Abstract:-
Women's activist composing alludes to artistic works that investigate and scrutinize the social, political, and financial imbalances experienced by ladies and other underestimated gatherings. Women's activist composing frequently resolves issues, for example, orientation jobs, male centric power structures, and the crossing point of orientation with different types of mistreatment, like race, class, and sexuality.

Women's activist composing can take many structures, including fiction, verse, papers, and verifiable. It can likewise incorporate a large number of styles and sorts, from exploratory to customary, and from individual to political.

One of the vital subjects in women's activist composing is the assessment of the encounters and points of view of ladies and other underestimated gatherings, and the test to the predominant man centric story. Women's activist composing frequently looks to give voice to these encounters and to feature the manners by which orientation imbalance and persecution influence people and networks.

Women's activist composing additionally investigates the manners by which ladies have opposed man centric designs and looked to challenge and change them. It features the qualities and versatility of ladies and underestimated networks, and praises their opposition and activism.

All in all, women's activist composing assumes an essential part in testing and changing man centric frameworks and designs, and in giving voice to the encounters and viewpoints of ladies and minimized gatherings. It is a significant type of political and social articulation that adds to the continuous battle for orientation equity and civil rights.

Introduction :-
Women's activist composing is a sort of writing that looks to address and scrutinize the disparities experienced by ladies and other underestimated gatherings. It is a type of political and social articulation that is worried about the portrayal and encounters of ladies in the public eye and the manners by which man centric designs and power elements influence their lives.

Women's activist composing can take many structures, including fiction, verse, expositions, and true to life. It includes a great many styles and classifications, from trial to conventional, and from individual to political.

One of the critical subjects in women's activist composing is the assessment of the encounters and points of view of ladies and other underestimated gatherings, and the test to the prevailing man centric story. Women's activist authors frequently look to give voice to these encounters and to feature the manners by which orientation imbalance and abuse influence people and networks.

Women's activist composing likewise investigates the manners by which ladies have opposed man centric designs and looked to challenge and change them. It commends the qualities and strength of ladies and minimized networks, and features their obstruction and activism.

All in all, women's activist composing assumes a significant part in testing and changing man centric frameworks and designs, and in giving voice to the encounters and points of view of ladies and underestimated gatherings. It is a significant type of political and social articulation that adds to the continuous battle for orientation uniformity and civil rights

Feminist Writing in Indian literature :-

Women's activist composing has a rich practice in Indian writing, tracing all the way back to old texts like the Apparatus Veda and the Mahabharata. In present day times, women's activist writing in India has filled in noticeable quality and has turned into a significant method for investigating and testing the man centric designs and power elements that influence the existences of ladies and other minimized gatherings.

Indian women's activist composing frequently manages topics like orientation jobs, savagery against ladies, sexuality, and the crossing point of orientation with different types of mistreatment, like rank, class, and religion.

Indian women's activist essayists frequently draw from their own encounters and the encounters of ladies in their networks, and they utilize their composition for the purpose of featuring and testing the manners by which male centric designs influence the existences of ladies and other minimized gatherings.

A portion of the unmistakable women's activist essayists in India incorporate Kamala Das, Ismat Chugtai, Mahashweta Devi, Anjum Hasan, and Shashi Deshpande. Their works frequently investigate the encounters of ladies in customary man centric social orders and the manners by which ladies oppose and challenge these designs.

Lately, women's activist writing in India has extended to incorporate many points of view and styles, mirroring the variety of the nation and its kin. From crafted by more youthful women's activist journalists, like Arundhati Roy and Meena Kandasamy, to crafted by laid out women's activist authors, for example, Ruth Prawer Jhabvala and Nayantara Sahgal, Indian women's activist composing keeps on assuming a significant part in testing man centric designs and advancing orientation equity and civil rights.

All in all, women's activist writing in Indian writing has a rich and different custom, and it keeps on assuming a significant part in testing man centric designs and advancing orientation equity and civil rights in India.

Importance of feminist writing :-

Women's activist composing assumes a vital part in forming general assessment and propelling the reason for ladies' privileges and orientation correspondence. It fills in as a stage to give voice to the encounters and viewpoints of ladies and other underestimated gatherings, and to challenge cultural standards and power structures that add to orientation mistreatment and separation.

Women's activist composing can take many structures, including fiction, true to life, verse, and journal. It reveals insight into issues, for example, the compensation hole, inappropriate behavior and attack, regenerative freedoms, and the convergence of race, class, and orientation. By instructing and moving others, women's activist composing has the ability to achieve change and make a more fair and just society.

What's more, women's activist composing can likewise give a feeling of local area and approval for the people who might feel segregated in their encounters and convictions. It can offer a space for reflection, mending, and strengthening for people who have confronted separation and mistreatment in light of their orientation.

In general, women's activist composing is a significant apparatus for upholding for ladies' freedoms, testing prevailing social stories, and advancing orientation uniformity.

Conclusion :-

Women's activist composing has a rich custom in Indian writing, tracing all the way back to old texts like the Apparatus Veda and the Mahabharata. In present day times, women's activist writing in India has filled in unmistakable quality and has turned into a significant method for investigating and testing the man centric designs and power elements that influence the existences of ladies and other underestimated gatherings.

Indian women's activist composing frequently manages topics like orientation jobs, brutality against ladies, sexuality, and the crossing point of orientation with different types of mistreatment, like standing, class, and religion. Indian women's activist essayists frequently draw from their own encounters and the encounters of ladies in their networks, and they utilize their composition for of featuring and testing the manners by which male centric designs influence the existences of ladies and other underestimated gatherings.

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All in all, women's activist writing in Indian writing has a rich and different custom, and it keeps on assuming a significant part in testing man centric designs and advancing orientation equity and civil rights in India.

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Study of Abo and Rh-D Blood Group among the Students of D. P. Vipra College, Bilaspur (C.G.)

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ABSTRACT: -
This study was aimed to identify the distribution patterns of ABO and Rh-D blood group among the Students of D.P.Vipra College,Bilaspur (C.G.) in order to promote social awareness, and safe blood transfusion among the population. A cross sectional, analytical study was carried out on a total of 527 students in D.P.Vipra College,Bilaspur (C.G.). The ABO blood group system in the total sample showed the same trend of prevalence with that of the general Indian subcontinent (B > O > A > AB). The same trend was found among males, but among females the order of prevalence was different (O > A > B > AB). Rh-D positive were 90.72% and Rh-D negative were 9.28%. Study of blood grouping is not only generating a simple database but also create a great social awareness about self-blood grouping and safe blood transfusion among the population of a country.

Keywords:- ABO, Rh-D, social awareness, agglutination method, chattishgarh.

INTRODUCTION :-

ABO blood groups were discovered by Landsteiner in 1901 (Landsteiner and Wiener, 1940). Later on in 1939, Rhesus blood groups were discovered by Landsteiner and Wiener in 1940. Since 1901, more than 20 distinct blood group systems have been identified but the ABO and Rhesus blood groups remain clinically the most important. Furthermore, they are also well defined genetic markers employed in population genetics (Amin-ud-Din et al., 2004; Sigmon, 1992). Blood group or blood type is based on the presence or absence of inherited antigenic substance on the surface of red blood cells that can be determined by specific antibodies (Garg et al., 2014). The importance of blood group discovery lies in the transfusion of blood amongst different populations irrespective of their ethnic origin, in organ transplantation and in the development of legal medicine, genetic research and anthropology (Storry, 2003). The major ABO blood group system is divided into four blood types on the basis of presence or absence of A and B surface antigens. The blood groups are A, B, O and AB. The frequency of four main ABO blood groups varies in the population throughout the world. ABO blood group system derives its importance from the fact that A and B are strongly antigenic and anti A and anti B natura lacking the corresponding antigen, and these antibodies are capable of producing intravascular hemolysis in case of incompatible transfusion (Harmening and Firestone, 2005). Blood group investigations in this subcontinent started during 1st World War with Hirschfled in 1919 who determined blood groups in large number of soldiers including Indians, and found high frequency of blood group B. Though records were not maintained separately for endogamous population groups, the studies revealed large regional and ethnic differences in blood group frequencies (Nydegger et al., 2007). The distribution of ABO and Rhesus blood group systems in Bangladeshis was studied in South East zone of the country during 1984 to 1988; the predominant blood group was O followed by B group (Majumder and Roy, 1982). In Eastern part of Bangladesh, O group was predominant and distribution of O and B was almost same in Western part (Nandy, 1986). The present study was conducted among the student D.P.vipra college bilaspur city corporation with the objective to observe the distribution pattern of ABO and Rhesus blood group system among them. This study will document a blood group data base as well as create social awareness among them, allow safe blood transfusion and prevent hemolytic disease of new born and fetus by knowing ABO and Rh typing.

MATERIALS AND METHODS

This cross sectional study was conducted in D.P.Vipra college,Bilaspur. A total sample of 527 participants irrespective of age and sex were included in the study. Samples were determined using random sampling technique.

Collection of specimens

After aseptic washing with 70% ethyl alcohol, blood samples were collected on grease free clean slide from left ring finger tip with the help of a sterile lancet. Blood groups were determined in a single slide to minimize any errors.

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Laboratory investigations

The determination of ABO blood group and Rh (D) blood group was done according to the principle of slide method (Sultana et al., 2013). A drop of blood from each volunteer was placed on a glass slide in three places. A drop of each of the antisera A, B and D was added and mixed with each blood sample, with the aid of glass rods. Then, the mixture was rocked gently for 60 seconds to observe for agglutination. The results of agglutination were recorded immediately after mixing. The agglutination in blood drop A was considered as group A, and agglutination in blood drop B as group B. The agglutination in both drops was considered as group AB, and if both blood drops were not agglutinated, it was considered as group O. The agglutination in rhesus blood drop was considered as rhesus positive and non-agglutination as rhesus negative.

Data collection

All the participants were told about the aims and objectives of the study, and the blood grouping procedures were briefed to them. Written consent was taken from the participants aged more than 18 years, and parents' consent was taken for those who were less than 18 years old. Particulars of the each participant were taken in a data collection sheet.

The Table 1. Showing distribution of ABO blood group among the male and female volunteers of D.P.vipra colleges

Sex	A	B	AB	O	Total
Male	80	120	27	100	327(62%)
Female	40	70	20	70	200(37.9%)
Total	120(22.7%)	190(36.05%)	479(8.9)	170(32.58)	527

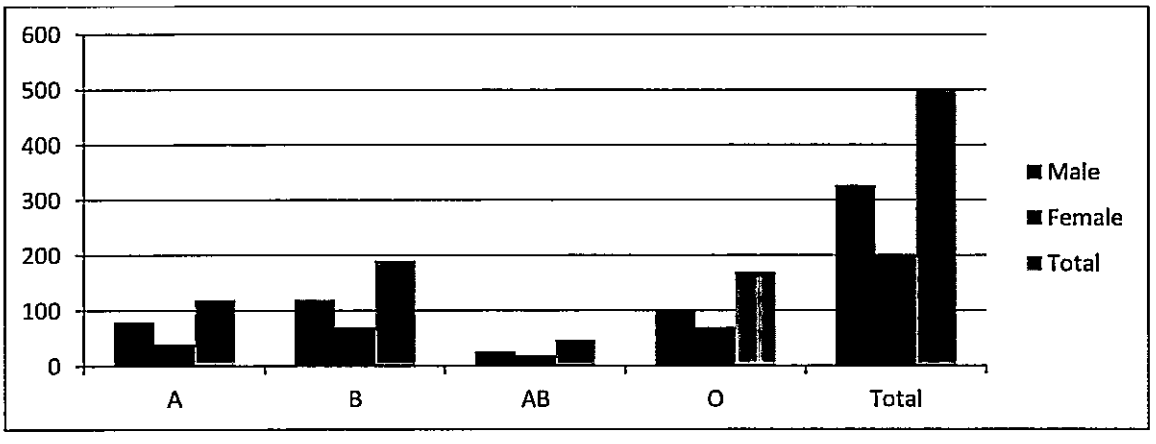
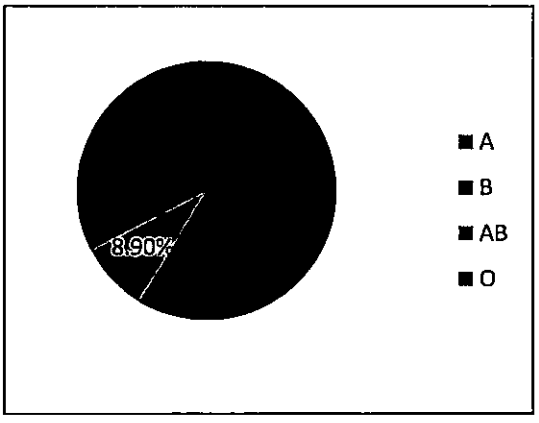


Fig. 1. Distribution of ABO blood group among total volunteers based on rhesus blood group.

RESULTS :-

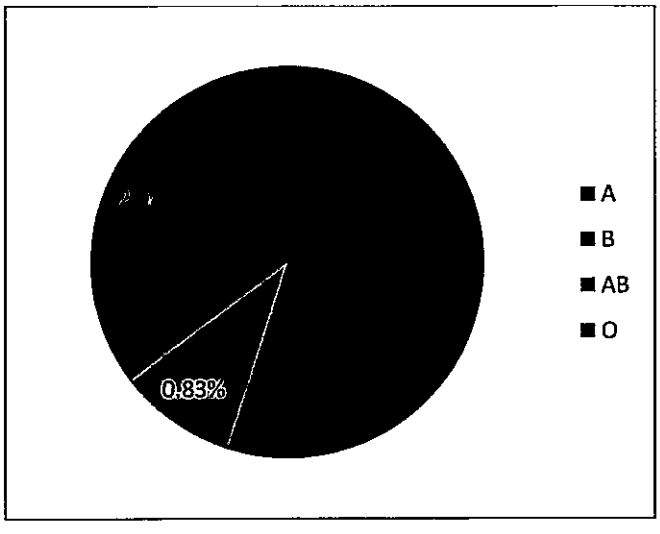
Out of 527 participants, 62% were male and 37.9% were female. Table 1 shows the distribution of ABO blood group among the male and female volunteers. ABO blood grouping data revealed that group 'B' was predominant with 36.05%, followed by group O with 32.58%, group A with 22.77% and group AB with 8.9%. Figure 1 shows the distribution of ABO blood groups among the total participants (for both male and female). The frequency distribution of Rhesus blood group among the participants is shown in Figures 3 and 4. The Rhesus- negative blood group distribution is 1.45% for group A, 3.2% for both group B, 2.98% for group O, 0.83% for group AB.

In the rhesus-positive blood group distribution, blood group A has percentage frequency of 21.32%; blood group B 32.58%; blood group AB 8.07% and blood group O 29.6%. Blood group B had the highest frequency followed by blood groups O and then A. Blood group AB had the least. The Rhesus-positive and Rhesus-negative vary among vary among the ABO blood group. Rhesus positive has the highest frequency (91.77%) while Rhesus negative has the lowest frequency (8.46). Table 2 shows the distribution of Rhesus blood groups by sex among the participants. The percentages of the ABO blood group and Rhesus blood group varies significantly.



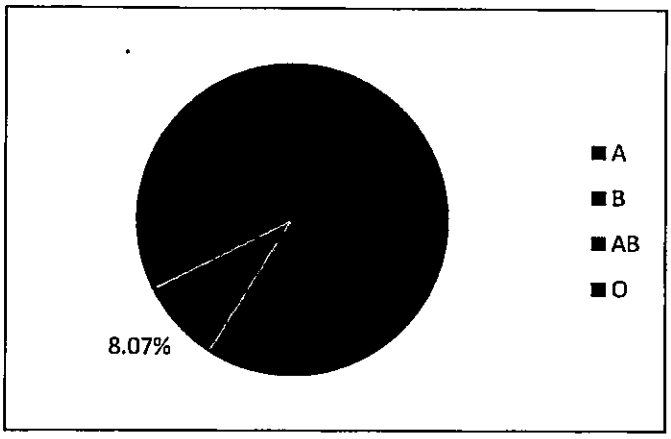
ABO Blood group			
A	B	AB	O
22.77%	36.05%	8.90%	32.58%

Table & Fig 2 : A,B,O Blood Group Distribution Among the Student of D.P. Vipra College Bilaspur (C.G.)



Rh Negative			
A	B	AB	O
1.45%	3.20%	0.83%	2.98%

Fig 3 : Rhesus Negative Blood Group Distribution Among the Student of D.P. Vipra College Bilaspur (C.G.)



Rh Positive			
A	B	AB	O
21.32%	32.58%	8.07%	29.60%

Fig 4 : Rhesus Positive Blood Group Distribution Among the Student of D.P. Vipra College Bilaspur (C.G.)

DISCUSSION:-

The present study has been carried out to determine the distribution pattern of ABO and Rh-D blood groups in Students of D. P. Vipra College. The knowledge of the blood groups and Rhesus factor is important in evolution, related to diseases and environment, essential in blood transfusion, organ transplantation, forensic pathology, anthropology and training ancestral relation of human (Khurshid et al, 1992), and also helps to prevent complications due to Rhesus incompatibility (Bamidele et al., 2013). This study showed that among the Students of D.P.Vipra College, blood group B was the commonest followed by O. The distribution pattern of A, B, O, and AB were 22.77 ,36.05, 32.58, and 8.9 % respectively. There are several factors such as genetic and environmental factors on variation of blood group frequency in different parts of the world. This study also found that, Rh (+ve) blood group is dominant in D.P. Vipra college Bilaspur. Moreover, Rh (+ve) group remains higher than Rh (-ve) group throughout the world.

Conclusion:-

This study showed higher frequency of group B followed by group O, A and AB which reflects the same blood group pattern with the previous studies conducted in D.P.Vipra College. Rh blood group system is also similar to other previous studies. Study of blood grouping not only generates a simple database but also create a great social awareness about self-blood grouping and safe blood transfusion among the population of a country.

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A Point Electric Dipole: From Basic Optical Properties to the Fluctuation–Dissipation Theorem

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Abstract:-

We comprehensively review the deceptively simple concept of dipole scattering in order to uncover and resolve all ambiguities and controversies existing in the literature. First, we consider a point electric dipole in a non-magnetic environment as a singular point in space whose sole ability is to be polarized due to the external electric field. We show that the postulation of the Green's dyadic of the specific form provides the unified description of the contribution of the dipole into the electromagnetic properties of the whole space. This is the most complete, concise, and unambiguous definition of a point dipole and its polarizability. All optical properties, including the fluctuation–dissipation theorem for a fluctuating dipole, are derived from this definition. Second, we obtain the same results for a small homogeneous sphere by taking a small-size limit of the Lorenz–Mie theory. Third, and most interestingly, we generalize this microscopic description to small particles of arbitrary shape. Both bare (static) and dressed (dynamic) polarizabilities are defined as the double integrals of the corresponding dyadic transition operator over the particle's volume. While many derivations and some results are novel, all of them follow from or are connected with the existing literature, which we review throughout the paper.

01. Introduction

Light–matter interaction is the principal phenomenon for many aspects of life and technology. Generally, electromagnetic radiation may be absorbed by atoms and molecules with subsequent dissipation into another energy form or re-emission at the same or different frequency. Unfortunately, this quantum description becomes too complicated for objects consisting of many atoms, which is the case even for small particles. Absorption and scattering of light by particles much smaller than the wavelength has been widely discussed in theoretical physics since the pioneering works of Lord Rayleigh [1], [2]. The Rayleigh approximation can be used for any small scatterer with the proper definition of the dipole moment. Although the dipole moment and polarizability seem intuitively clear, their calculation from the particle's size, shape, and internal properties may require cumbersome numerical computations for electrodynamic and/or quantum mechanical problems. It becomes especially complicated in Nano photonics, where atomic and electrodynamic theories meet [3]. Moreover, different definitions of polarizability exist.

The dipole moment is a well-defined concept when there is a charge distribution in space. The definition can be found, e.g., in Wikipedia [4] and classical textbooks [5]. However, the charge distribution is usually unknown in practice and should be found through a solution of a separate problem. For instance, an electrostatic problem should be solved to find the induced dipole moment of a particle in a uniform electric field. Many papers are devoted to the solution of this problem in order to obtain the polarizability of particles with complex shape, see, e.g., [6], [7]. This polarizability relates the dipole moment to the incident electrostatic field. It is common to define a (quasi-)static, or bare polarizability, which is the same quantity as above but calculated with the use of a frequency-dependent permittivity.

2. Phenomenological description of a point dipole

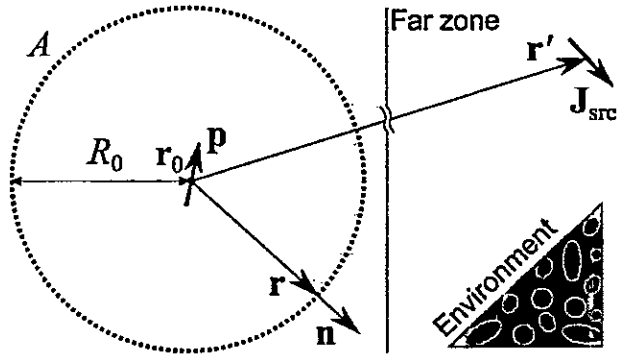
2.1. Basic definitions

The concept of a point dipole seems intuitively clear when speaking about absorption and scattering of light by atoms, molecules, and subwavelength particles. Although all these objects do have finite size, it is common to describe them mathematically as a delta-function in space having certain polarizability (and, hence,

the dipole moment). This description contains a singularity by design, resulting in unexpected effects when one tries to relate the polarizability with the internal properties, such as the permittivity. Not surprisingly, the literature contains several definitions of the polarizability. Apart from the one for purely electrostatic problem with zero-frequency (irrelevant for scattering at frequency), these include bare or static, based on [8], renormalized [15], and radiation-corrected (dressed or dynamic) ones [12], [13], [21]. But even those terms are not completely universal. For instance, a different definition of bare polarizability is used in [22], the terms "dynamic bare" and "dynamic dressed" are used in [23], and the term "quasi-static" was used in [24] to indicate the frequency dependence through. The term static polarizability is indeed potentially confusing, but since is just a constant parameter (or a function of r) in the electrostatic problem, one can take its value at frequency as well. Throughout the review we will use the latter convention. However, we defer the discussion of how the internal structure, including, and the polarizability of a small particle are related to Sections 3 and 4. Meanwhile we treat the polarizability as a prescribed constant.

We limit ourselves to the monochromatic electromagnetic waves with the time dependence and to non-magnetic materials, and use the SI units throughout the review. The description is based on the dyadic Green's function, which by definition relates the field with the point current source placed at [25]:
(1) Here and further we denote vectors and dyadic (33 matrices) by bold letters without and with over line, respectively; the cantered dot denotes the bilinear dot product of vectors and/or dyadic (not to be confused with the sesquilinear inner product implying conjugation of the second argument — see Appendix E).

Fig. 1. Layout of the scattering problem for a point dipole.



2.2. Extinction, absorption, and scattering

Absorption and scattering by a point dipole are important from the experimental point of view. For instance, the amount of absorbed energy is vital for such applications as the molecular light conversion systems [29], [30], solar cells [31], nanoparticles-based photo thermal effect [32] and many others. In this respect, scattering does not only play a role as an energy sink, but is also a basis for far-field observations. The expressions for the absorption and scattering powers of the point dipole seem well-known and trivial, but there are three important caveats.

2.3. Fluctuation–dissipation theorem

Thermal emission is of great importance for many experimental techniques and applications. Near-field radiative heat transfer is significant for thermal management of non scale devices, imaging, nonmanufacturing, thermal rectification, near-field thermal spectroscopy, and thermo photovoltaic power generation (see [39], [40] and references therein). While the fluctuations (their correlation) are governed by quantum equations, thermal emission can be treated quasi-classically using the standard electromagnetics complemented by the FDT [40].

The FDT relates the rate of energy dissipation in a non-equilibrium system to the fluctuations that occur spontaneously at equilibrium [3]. In electromagnetics the FDT is well-established in terms of fluctuating currents or electric fields (see below). However, in the presence of point dipoles the most convenient formulation of the

FDT is the one that relates the correlation of the fluctuating dipole moment with the imaginary part of its polarizability. But, as discussed in Section 2.2, the latter has several possible definitions, resulting in different versions of the FDT. This can lead to confusion when one polarizability is used with the environmental correction intended for another one. For instance, the expressions for the detector readings in the same setup do not agree in [16] and [17]. The difference stems from the fact that in [16] the authors used in the FDT formulated for . The same incorrect formulation of the FDT can be found in [41].

Conclusion

The seemingly simple concept of an electric dipole conceals pitfalls which may result in ambiguous expressions for the measurable quantities. We aimed to provide the description with minimal empirical assumptions and from as many points of view as possible. In the first part, we reviewed the results which follow from a point-dipole abstraction – a singular (infinitesimal) point in space whose sole ability is to be polarized due to the external electric field. It was shown that two existing approaches to obtain a relation between the static (bare) and the dynamic (dressed) polarizabilities are asymptotically equivalent. This equivalence is defined as the one valid for any , including purely real one (corresponding to a non-absorbing dipole), which explains the significance of the radiative correction as the main term of . We revisited classic results for absorption and emission by the integration of the Poynting vector over a surface enclosing the point dipole, thereby avoiding the singularity, in the most general case of inhomogeneous and not necessarily reciprocal environment. We maintained this generality throughout the review. As the main result of this part, we introduced the source Green's dyadic that describes the contribution of a point dipole into the electromagnetic properties of the whole space. In the same time, it serves as a single-equation unambiguous definition of the point dipole and all its optical properties. In particular, it allows one to rigorously derive the fluctuation–dissipation theorem (FDT) in terms of the fluctuating dipole moment, resolving the existing confusion in the literature.

In the second part of this review, we discuss the most common microscopic model of a point dipole – a small sphere. In contrast to the phenomenological point dipole, this model implicitly includes the internal polarization and/or electric field inside the particle. As a result, the well-known Lorenz–Mie theory provides a completely rigorous theoretical description without any empirical assumptions. In particular, we showed that two definitions of the dipole moment, namely one with respect to the far-field scattering and another as the integral of, are exactly the same. However, the usual expressions of the two for a small sphere are only asymptotically equivalent, while the second-order in corrections are different. This result explains why there are several expressions for non-radiative correction in the literature. Next, we derived the FDT for from the microscopic FDT for the fluctuating currents inside the sphere and the definition of through. The result is equivalent to that for the point dipole, but avoids explicit consideration of the thermal equilibrium.

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Praacheen Bhaarateey Gyaan Parampara Kee Amooly Thaatee Aayurved: Mooly Evan Mahatta

(प्राचीन भारतीय ज्ञान परंपरा की अमूल्य थाती आयुर्वेद: मूल्य एवं महत्ता)

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'मा कश्चित् दुख भाग भवेत' का उद्घोष करने वाली सनातन भारतीय परंपरा अनादिकाल से पहला सुख 'निरोगी काया' को मानती आयी है, भौतिक सुख-समृद्धि एवं संसाधनों की अभिवृद्धि को नहीं हम सबके जीवन के भिन्न-भिन्न अनुभव इस सत्य को प्रमाणित करते हैं कि इस संसार में न केवल मानव बल्कि सभी मानवेतर प्राणी भी यहां तक कि तुच्छ से तुच्छ कीट- पतंगे जैसे जीवधारी भी, रोग, वियोग, नुकसान और अज्ञान से बचने की निरन्तर कोशिश करते हैं साथ ही सतत रूप से सुख प्राप्ति हेतु सदैव सजग एवं प्रत्यनशील भी रहते हैं। इस तथ्य को आधार बनाकर हम बड़े विश्वासपूर्वक यह कह सकते हैं कि इस सृष्टि की उत्पŸिo के साथ ही मनुष्य भूख प्यास, नींद आदि अपनी स्वाभाविक इच्छाओं की पूर्ति तथा आधि (मानसिक क्लेश) - व्याधि (शारीरिक क्लेश) से निजात पाने हेतु शुरूआत से ही प्रयत्नशील रहा होगा और शायद इसी जरूरत की पूर्ति के अनुक्रम में 'आयुर्वेद' का जन्म हुआ होगा। यह विश्व की प्राचीनतम चिकित्सा पद्धति है जो कि अनादि एवं शाश्वत है। आज कल हम लोग अपने दैनिक जीवन में एलोपैथी (आधुनिक चिकित्सा पद्धति), होम्योपैथी, नेचुरोपैथी (प्राकृतिक चिकित्सा पद्धति), रेकी आदि अनेक प्रकार की चिकित्सा पद्धतियों का प्रयोग करते हैं परन्तु हम इस तथ्य को विस्मृत कर ही नहीं सकते कि आयुर्वेद मात्र एक चिकित्सा-पद्धति ही नहीं, बल्कि समग्र जीवन पद्धति है जो सहस्रों वर्षों से भारतीय जीवन पद्धति का अभिन्न अंग रही है और हमारे जीवन में ऐसी रची बसी है कि हम चाहकर भी उससे मुक्त नहीं हो सकते।

हम कितने भी आधुनिक अथवा उŸoार-आधुनिक क्यों न हो जाएं किंतु हमारे पारिवारिक एवं सामाजिक जीवन में आज भी ये नसीहतें एवं निर्देश पीढ़ी-दर-पीढ़ी लगातार चलते चले आ रहे हैं कि पेट दर्द, बदहजमी या गैस की समस्या होने पर तत्काल हींग और आजवाइन लेने को कहा जाता है, खांसी-जुकाम में ठण्डे पानी का निषेध, अदरक-तुलसी-कालीमिर्च का काढ़ा, शहद के साथ अदरक का रस तथा हल्दीवाला गरम दूध पीने की नसीहतें दी जाती हैं। किस खाद्य पदार्थ की प्रकृति ठण्डी है, किसी गरम, किस ऋतु में कौन-सी चीज लाभदायक है और कौन-सी नुकसानदेय ये ऐसे सभी निर्देश आयुर्वेद के सिद्धांतो पर ही आधारित है। हम अपने बुजुर्गों से घर में विशेष रूप से रसोई में प्रयुक्त होने वाले पदार्थों के औषधीय गुणों के बारे में बराबर सीखते चले जा रहे हैं।

अब सवाल यह है कि जो आयुर्वेद हमारे जीवन में इस कदर घर कर गया है कि उसे हम अपने जीवन से अलग कर ही नहींo सकते, वह वास्तव में है क्या? यह जानने के लिये हमें इस शब्द के व्युत्पŸिoापरक अर्थ की तरफ रूख करना पड़ेगा। संस्कृत का यह शब्द 'आयुष' $ 'वेद' इन दो शब्दों के संयोग से बना है, जिसमें 'आयुष' का अर्थ जीवन और 'वेद' का अर्थ-विज्ञान है । इस प्रकार आयुर्वेद शब्द का शाब्दिक अर्थ हुआ 'जीवन का विज्ञान'। साधारण शब्दों में कहें तो जीवन को ठीक-ठीक प्रकार से जीने का विज्ञान ही आयुर्वेद है, क्योंकि यह विज्ञान न तो केवल रोगों का पता लगाता है और न उनका निदान मात्र करता है अपितु यह अपने समग्र रूप में निरोगी जीवन जीने के सर्वतोभावेन पथ का संधान करता है। जब हम आयुर्वेद को एक चिकित्सा पद्धति भर कहते हैं, तो यह निश्चित है कि हम इसे सीमित अर्थ में प्रयुक्तकर रहे होते हैं, क्योंकि यह अपने व्यापक अर्थ में स्वास्थ्य रक्षा और रोग-निवारण दोनों के लिये व्यवस्थित एवं क्रमबद्ध ज्ञान प्रदान कराता है। इस दृष्टि से आधुनिक चिकित्सा पद्धति यानी एलोपैथ, जिस पर आज हम सब आश्रित हैं, आयुर्वेद का पासंग मात्र भी नहीं है, क्योंकि एलोपैथ में तो केवल रोगों का निवारण मात्र किया जाता है, स्वास्थ्य रक्षा की दृष्टि से यह रोग क्यों हुआ यह जानने और उस रोग की जड़ में मट्ठा डालने ताकि वह भविष्य में दुबारा न हो एलोपैथ कोई उपक्रम नहीं करता। धनवंतरी भगवान इस जीवन-विज्ञान के जनक माने जाते हैं और आयुर्वेद के सिद्धान्तों एवं नियमों को निर्माण हेतु आचार्य चरक एवं शुश्रुत के नाम लिये जाते हैं।

आयुर्वेद के इन बाबा आदम आचार्यों द्वारा सहस्रों वर्षों पूर्व शुश्रुत संहिताओं में इस समग्र पद्धति के सिद्धांतों का विस्तृत निरूपण किया गया है। व्यस्ततम दिनचर्या वाली आधुनिक जीवन शैली में आयुर्वेद की प्रासंगिकता दिन-प्रतिदिन बढ़ रही है। यही कारण है कि आज यह परंपरागत भारतीय चिकित्सा-पद्धति अपनी असाधारण महत्ता के कारण वैश्विक स्तर पर भी तेजी से लोकप्रिय हो रही है। यह चिकित्सा पद्धति तुलनात्मक रूप से सस्ती तो है ही साथ ही इसमें प्रयोग होने वाली जड़ीबूटियों, भस्मों और अर्कों का मानव शरीर पर कोई दुष्प्रभाव नहीं पड़ता जबकि इसी के समानान्तर एलोपैथी दवाओं के भयंकर जानलेवा साइडिफेक्ट हैं। शायद यही कारण है कि भारतीय चिकित्सा-परिषद में भी वर्ष 1970 ई. में आयुर्वेद को एक वैकल्पिक चिकित्सा-पद्धति के रूप में मान्यता प्रदान की और सुयोग्य

आयुर्वेदिक चिकित्सकों की उपलब्धता सुनिश्चित करने हेतु इसके अध्ययन-अध्यापन की विधिवत शुरूआत हुयी। वर्ष 1976 में विश्व स्वास्थ्य संगठन ;ॅभ्व्द्ध ने भी इस परंपरागत भारतीय चिकित्सा-पद्धति के वैश्विक महत्व को स्वीकार किया और इसे बाकायदा आधिकारिक मान्यता प्रदान की। हम भारतीयों के लिए यह अत्यन्त गर्व का विषय है। अभी अर्सा नहीं बिता है, कोविड की वैश्विक महामारी में आयु रक्षा कवच ने लाखों लोगों को नवजीवन प्रदान किया है, इस सत्य से मुंह नहीं मोड़ना जा सकता। आयुर्वेदिक औषधियों ने लोगों की इम्युनिटी को बूस्ट करके उन्हें कोरोना वायरस से लड़ने की अमोघ शक्ति प्रदान की परिणाम स्वरूप लाखों लोग इस वैश्विक महामारी का शिकार होने से बच सके। यह इस वैकल्पिक चिकित्सा-पद्धति का कमाल है, जिसे उस दौरान हम सबने किसी न किसी रूप में जरूर प्रयोग किया है और बड़े विश्वास के साथ उसकी शरण में अपनी प्राणरक्षा हेतु गये हैं। इसी विश्वास को व्यापक स्तर पर पुनः स्थापित करने की आज सबसे अहम जरूरत है ताकि लोग आयुर्वेद को अपनाकर स्वस्थ एवं संतुलित निरोगी जीवन जी सकें। भारत सरकार का आयुष मंत्रालय जन-जन तक इस वैकल्पिक चिकित्सा-पद्धति को पहुंचाने हेतु सतत रूप से प्रत्यनशील है और एतदर्थ इसका व्यापक स्तर पर प्रचार-प्रसार कर रहा है। हम सबको भी इसे एक जन आंदोलन के रूप में लेकर इस सहस्रों वर्ष पुरानी जीवन रक्षक चिकित्सा-पद्धति के साथ अधिकाधिक जुड़ना चाहिए और इसे अपनाने हेतु सक्रिय प्रयास करने चाहिए। यह भारतीय ज्ञान-परंपरा का वह नायाब कोहिनूर है जिसे आज वैश्विक स्तर पर भी मुक्तकंठ से स्वीकृति प्राप्त हो रही है।

आयुर्वेद विश्वकल्याण का पाथेय है जिसके सिद्धांत व्यक्ति विशेष जाति अथवा देश तक सीमित नहीं हैं, ये सार्वभौम हैं। जिस प्रकार जीवन सत्य है उसी प्रकार ये सिद्धांत भी सभी जगह मान्य एवं सत्य हैं अर्थात् ये जीवन रक्षक सिद्धांत शाश्वत्, सार्वभौम एवं सार्वजनिक हैं। यह वह पद्धति है जिसमें "सर्वेभवन्तु सुखिनः सर्वेसन्तु निरामयाः" अर्थात् सभी सुखी हों और सभी निरोगी हों यानि व्यापक जनकल्याण का उदात्त भाव निहित है। सबसे बड़ी बात तो यह है कि यह एक वैकल्पिक चिकित्सा-पद्धति होने के साथ-साथ एक संपूर्ण जीवन-पद्धति एवं साधना-पद्धति भी है, जो प्राचीन भारतीय-ज्ञान-परंपरा का एक स्वर्णिम अध्याय है।

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(मरूस्थलीय परिस्थितिक तंत्र)

प्रो. दीक्षा देवांगन, प्रो. गेंदलाल बंजारे
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सारांशः- पारिस्थितिक तंत्र (म्बवेलेजमउ) शब्द का प्रथम प्रयोग सन् 1935 ई. में ए.जी. टॉस्ले ने किया था। पारितंत्र (म्बवेलेजमउ) एक ऐसा क्षेत्र होता है, जिसमें सभी प्रकार के सजीव (जैव), निर्जीव (अजैव) घटक अपनी विकास करते है। उत्पति से लेकर मृत्यु तक एक दूसरे पर निर्भर रहते है।

पारिस्थितकी दृष्टिकोण से पारिस्थितक तंत्र दो प्रकार से पृथ्वी पर पाया है-

(1) स्थलीय पारितंत्र

(2) जलीय पारितंत्र

मरूस्थलीय पारिस्थितिक तंत्र स्थलीय पारितंत्र का एक प्रकार है। पृथ्वी पर मरूस्थलीय क्षेत्र एक ऐसा स्थान विशेष होता है, जहां पर प्राकृतिक भौतिक एवं जैविक कारकों के मध्य सर्वाधिक जलवायु व मौसमी प्रतिकूलता दृष्टिगत होती है।

मरूस्थल पर जलवायु अधिक विषम पायी जाती है वर्षा 25 बण्उण् से भी कम, वाष्पीकरण वर्षा से अधिक, तापमान सर्वाधिक , वायु हमेशा शुष्क होती है, वर्षा, कभी-कभार तथा कई वर्षों तक सूखा ही पड़ जाता है। आर्द्रता बहुत कम और दिन सर्वाधिक गर्म व राते शीतल होती है।

"जिस स्थान पर 25बण्उण् से कम वर्षा तथा वाष्पीकरण वर्षा से अधिक हो वह स्थान मरूस्थल या मरूभूमि कहलाता है।"

सम्पूर्ण पृथ्वी के लगभग एक-तिहाई से अधिक भाग पर मरूस्थली क्षेत्र का विस्तार पाया जाता है। यहां पर भूमिगत जल बहुत गहराई पर मिलता है। जिसके कारण यहां पर जीव-जन्तु, पेड़ पौधे, एवं वनस्पतियों की संख्या बहुत कम पायी जाती है। यहां पर जैव- विविधता की स्थिति नग्ण्य देखने को मिलती है।

अध्ययन के लिए मरूस्थल निम्न भागों में विभक्त किया गया है-
01. गर्म मरूस्थल, जैस - सहारा, कालाहारी, धार
02. शीत मरूस्थल, जैसे - गोबी, धुरवीय लद्धाख आदि
विश्व के मरूस्थलों में घास, कंटीली झाड़ियां, ऊंट, भेड-बकरी , हिरण, बाज, गधे, रात्रिचर स्वभाव वाले जीव-जन्तु पाये जाते है।

मरूस्थलीय पारिस्थितिकी तंत्र

¼Desert Ecosystem½

प्रस्तावना- किसी क्षेत्र विशेष में जीव-समुदाय और पर्यावरण के कारक, संरचना तथा कार्यात्मक तंत्र के रूप में कार्य करते है, जिन्हें पारिस्थितिक तंत्र कहा जाता है।

पृथ्वी में दो प्रकार के पारितंत्र पाऐं जाते हैं। (1) जलीय (2) स्थलीय पारितंत्र। मरूस्थलीय पारितंत्र, स्थलीय पारिस्थितिक का मुख्य प्रकार है। मरूस्थल एक ऐसा स्थान है जहां पर वर्षा कम (25बण्उण् से भी) होती है। यहां की मौसम व जलवायु प्रतिकुल होती है, वायु शुष्क आर्दता बहुत कम, तापमान अधिक तथा वाष्पीकरण वर्षा की तुलना में अधिक होती है। विश्व का लगभग एक-तिहाई भू-भाग पर मरूस्थलीय क्षेत्रों का विस्तार पाया जाता है। (ध्रुवीय एवं उपध्रुवीय भागों में छोड़कर) विषम जलवायु के कारण ही यहां पर जैव-विविधता भी कम पायी जाती है, इस वातावरण के अनुकूलन में कुछ वनस्पतियां झाड़ियां, जीव-जन्तु पाए जाते हैं।

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मरूस्थलीय पारितंत्र के अंतर्गत वातावरण के जैविक (सजीव) व अजैविक (निर्जीव) दोनो घटको के बीच परस्पर क्रिया का अध्ययन किया जाता है। सहारा, कालाहारी, थार, गोबी सऊदी अरब, प. ऑस्ट्रेलिया आदि विश्व के मुख्य मरूस्थल है। रेगिस्तान तापमान और मौसम की विस्तृत श्रृंखला का अनुभव कराता है, तथा इन्हें अध्ययन के लिए निम्न उप-भागों में बांटा गया है।

01. गर्म या उष्ण मरूस्थल।

02. ठंडा या शीत मरूस्थल।

03. अर्धशुष्क मरूस्थल।

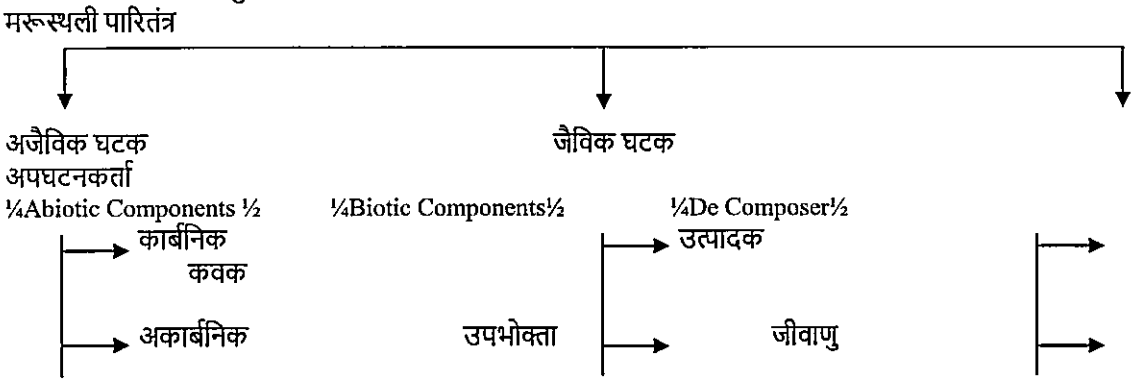
04. तटीय मरूस्थल।

कहा जा सकता है कि जिस स्थान विशेष में वाष्पीकरण अधिक होता है वह स्थान मरूस्थल या मरूभूमि कहलाता है। भारत के पश्चिमी भाग में उष्ण मरूस्थल तथा उŸोारसीमा में शीत मरूस्थल पाये जाते हैं।

मरूस्थल पारितंत्र ¼Desert ecosystem½

मरूस्थल अरबी भाषा के ''सखरा'' शब्द का अनुवाद है, जिसका अर्थ ''मरूस्थल'' होता है। इस पारितंत्र में मुख्य रूप से लंबे समय तक वर्षा नहीं या बहुत कम होने के कारण वायु में नमी को कमी, तापमान उच्च होता है। अधिकांश मरूस्थलीय क्षेत्र कर्क व मकर रेखा के मध्य 150-350 तथा महाद्वीपों के पश्चिमी तटों पर पाये जाते है। धरातल पर मरूभूमि का विस्तार लगभग 1/7 भाग पर है। महाद्वीपीय विस्थापन सिद्धांत तथा विश्व जलवायु वर्गीकरण सिद्धांत यह स्पष्ट करता है कि वर्तमान मरूस्थल पूर्व में कभी हिम से ढंके हुए थे और जो हिम क्षेत्र है वे मरूस्थल से। मरूस्थल का विस्तार मानवीय तथा प्राकृतिक कारकों से वर्तमान में लगातार हो रहे जलवायु परिवर्तन के कारण मरूस्थलीय क्षेत्रों का विस्तार होता जा रहा है। जिसका मुख्य कारण तापमान में वृद्धि है जिससे वाष्पीकरण की दर में वृद्धि हो रही है। भूमिगत जल में कमी या अधिक गहराई के कारण यहां जैव-विविधता क्रम दिखाई देती है। थार मरूस्थल भारत का महान मरूस्थल है जो गुजरात से लेकर, पंजाब, हरियाणा, राजस्थान, अरावली पर्वत के उपरी-पश्चिमी भाग में फैला हुआ है।

मरूस्थलीय पारितंत्र के मुख्य घटक



01. अजैविक घटक (**Abiotic Components**)- (इसे दो भागों में बांटा गया है, अकार्बनिक तथा कार्बनिक)
(A) अकार्बनिक - इसे मृत या निर्जीव घटक कहा जाता है। मरूस्थल में तापमान, वाष्पीकरण, शुष्कता रेतीली मृदा, बहुत अधिक होती है, तथा मृदा बहुत अधिक होती हे तथा मृदा जल, नमी कम मात्रा में पायी जाती है। रेतीली व मरूस्थल मृदा में च्ी लवणताा व कैल्शियम कार्बोनेट की अधिक व नाइट्रोजन Co2, फॉस्पोरिक अम्ल का प्रायः अभाव पाया जाता है। मृदा में 95% बालू की मात्रा होती है, जिसके कारण नमी धारण करने की क्षमता कम तथा अपरदन निरंतर चलती रहती है।
(B) कार्बनिक घटक - कार्बोहाइड्रेटस, प्रोटीन्स, लिपिड्स एमिनो अम्ल आदि।

02. जैविक घटक (**Biotic Components**) - तापमान की अधिकता, जल की कमी के कारण यहां पर वनस्पति की कमी पायी जाती है। मरूस्थल की विषम जलवायु में संरचनात्मक तथा कार्यात्मक अनुकूलन की सहायता से कुछ पादप व जीव

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जन्तु यहां पर जीवित रहते हैं। इस घटक के अंतर्गत ,स्वपोषी(¼Autotrophs) उत्पादक, तथा परपोषी, आदि घटकों का अध्ययन किया जाता है।

(A) उत्पादक (**producers**) - कुछ झाड़ियां या विशेष प्रकार की वनस्पति इसके अंतर्गत सम्मिलित है। मरूस्थलीय पारितंत्र के अंतर्गत 5% से भी कम वनस्पति पायी जाती है। मरूस्थलीय वनस्पतियों को दो भागों में विभाजित किया जा सकता है।

(B) अल्पकालिक पौधे - इसके अंतर्गत उन पौधों, वनस्पतियों, झाड़ियों को सम्मिलित किया जाता है, जो, वर्षा ऋतु में उगे व उगाएं जा सकते हैं। इन पौधे का जीवन काल बहुत छोटा होता है। उदा. आंधीजाड़ा, हुल-हुल, धोलफूली, गोखरू, नागार्जुनी सेवण, बालू का साग घास आदि।

(ii) दीर्घकालिक पौधे - इनके अंतर्गत उन पादपों को रखा जाता है जिसमें निम्न विशेषता पायी जाती है। सहनशीलता, उच्चतापमान, शुष्कता, तीव्र पवन वेग आदि को सहन करने वाले।

- मांसलता वाली वनस्पतियां।
- पतियां जिनमें कम लगती हो।
- कांटेदार, पादक।
- कम जल में उगने वाले वनस्पतियां।
- वर्षा व ग्रीष्म दोनों ऋतु वाले पादप।

उदा. सीपं , आंक, मूंज, ऊंटकंटेली, कांस, कीकर, सरकंडा, खेजड़ी, विलायती, रोहेड़ा झड़बेरी, बबूल आदि।

(B) उपभोक्ता (Consumer)- मरूस्थली पारितंत्र के अंतर्गत निम्न उपभोक्ता पाए जाते है।

- प्राथमिक उपभोक्ता अर्थात शाकाहारी (**Primary consumer or herbivores**) - इसके अंतर्गत वे सभी जीवधारी आते हैं, जो अपना भोजन हरे-भरे, पेड-पौधे, वनस्पतियों आदि से ग्रहण करते हैं। उदा. गाय, भैंस, बकरी, हिरण, गिलहरी, बन्दर, भेड, घोड़े, चूहे, आदि।
- द्वितीयक उपभोक्ता अर्थात् मांसाहारी (**Secondary Consumer of Carnivores**) - इसके अंतर्गत सभी मांसाहारी जीव आते है, जो अपना भोजन शाकाहारी जन्तुओं का शिकार करके प्राप्त/ग्रहण करते हैं। उदा. सांप, भेड़िया, लोमड़ी, बिल्ली, कौआ, शेर, चीता, मेंढ़क, लकड़बग्घा, आदि।
- तृतीय उपभोक्ता अर्थ सर्वभक्षी (**Tertiary Consumer or Omnivores**)- इस श्रेणी में वे जीव-जन्तु आते है जो अपना भोजन प्राथमिक व द्वितीय उपभोक्त से प्राप्त करते है। इन्हें सर्वोच्च मांसाहारी (ज्वच बंतदपअवतमे) तथा शाकाहारी व मांसाहारी दोनों कहते है। उदा. मनुष्य, बाघ, चीता, शेर, बाज आदि।

03. अपघटनकर्ता (**Decomposer**) - मरूस्थलीय क्षेत्रों जल की कमी के कारण यहां पर नमी कम पायी जाती है, जिसके कारण वनस्पति, घास का अभाव या न्यूनता के कारण मृदा में मृत कार्बनिक पदार्थों तथा (कवक व जीवाणु) की कमी होती है, उच्च ताप को सहन करने वाले जीवाणु व कवक ही यहां मुख्य अपघटक होते हैं।

मरूस्थलीय पारितंत्र के प्रकार

(Types of Desert Ecosystem)

1. उष्ण गर्म मरूस्थलः- विश्व के अधिकांश गर्म मरूस्थलीय क्षेत्र 150.300 अक्षांशों में कर्क व मकर रेखा के महाद्वीपों के पश्चिमी भाग पर पायी जाती है।

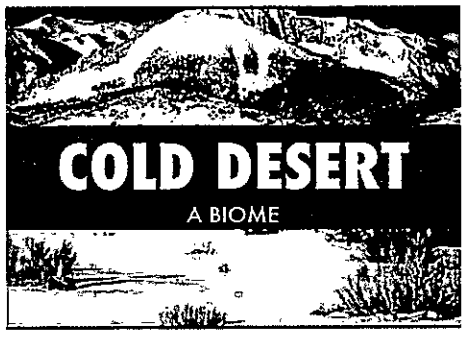
उदा.- सहारा, कालाहारी-आफ्रीका में, अरब ,थार-एशिया में, विक्टोरिया-ऑस्टेलिया में, कोलोरेडो - उ.अ.में, पेरू, अटाकामा - द.अ.में आदि।

सहारा मरूस्थलय (लगभग 8.54 लाख वर्ग कि.मी.) सबसे विशाल मरूस्थल है। उष्ण मरूस्थल में अधिक शुष्क हवाएं चलाती है यहां पर जीव-जन्तु पादपों की संख्या कम होती है।

- तापमानः- ग्रीष्मकालीन 350-400 से.टी.ग्रेड दैनिक 150-200 से वार्षिक 200-320 से अधिक तापमान अल्जीरिया - 580 से.टी.ग्रेड
- वर्षा:- 250 से.मी. से भी कम, कभी-कभी 3-4 वर्षों तक वर्षा नहीं होती ।
- वनस्पतिः- बालू, बजरी, पथरीली नग्न चट्टानी सतहें उत्थित पठार यहां अत्यधिक होती है। जिसके कारण इस जलवायु के अनुकूल जीवित रहने वाले पादपों का विस्तार होता है। उदा.- घास, कंटीली झाड़िया, नागफनी बबूल, यूफोर्बिया, इकिमेरल, कैक्टस, खजूर, ऐकेशिया, प्रोसोपिस, टैमेरिक्स, आदि।

- प्राणीजातः- ऊंट, भेड़ बकरी, लकड़बग्घा, सियार, लोमड़ी बिच्छू, सांपो की विभिन्न प्रजातियां, छिपकलियां, हिरण गधे। लोगों का जीवन कष्टकारी होता है। आर्थिक दृष्टिकोण से देखा जाए तो मरूस्थलों में बहुमूल्य खनिज तथ्वों की प्राप्ति होती है।

2. ठंडा मरूस्थलः- पृथ्वी पर यह स्थान मुख्य रूप से ध्रुवीय या ऊंचे पर्वतीय क्षेत्रों में फैला हुआ है। अधिकांशत यहां पर बर्फ फैला रहता है। वर्षा हिम के रूप में होता है।



- **तापमान**- शून्य हिमांक से भी नीचे होती है प्रकाश के कमी के कारण यहां के पौधों में वाष्पोत्सर्जन ठीक न होने के कारण पादपों की संख्या कम होती है। विभिन्न ऋतुओं में यहां विभिन्न प्रकार की वनस्पति पेड़ पौधे फूल व वृक्ष जैसे ओक, पाइन, बर्च, ब्रुरश, शरपत, पॉपलर, सेब , खुबानी, अखरोट आदि पल्लवित होते हैं।
- **पक्षी**- रॉबिन, रेडस्टार्ट, रैवेन, स्नोकॉक
- **जीव**- चिरू, हिमतेंदुआ, जंगलीयाक, आइबेक्स, भूरा भालू, ब्लैक नैवडन, क्रेन जंगलीय, भेड़ बकरी आदि।
- जीवन गर्म मरूस्थल के जैसे ही यहां पर कष्टकारी होता है।

मरूस्थलीय पारितंत्र में पौधों की विशेषता -

- पतियों का रन्ध्र सिकुड़ा हुआ होता हैं।

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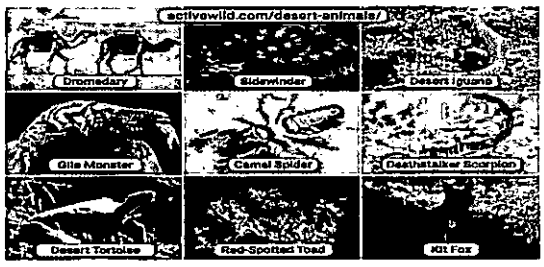
- पौधों के तनों में क्लोरोफिल पाया जाता है, जो प्रकाश-संश्लेषण की प्रक्रिया में अपना योगदान देते हैं।
- जड़ अत्यधिक गहराई तक जाती है।
- पतियां तथा तने ज्यादातर पादपों में गुदेदार (क्यूटिकल) होते हैं। जो अधिक समय तक अपने अन्दर जल को संचती रखती है।
- तना-मोटा, चपटा व मांसलदार होती है।
- पतियां कांटेदार होती है।
- प्रमुख पादप - नागफनी, बबूल, युकोर्बिया, तेजबुरश।

मरूस्थलीय पारितंत्र के जीवों की विशेषताएं -

- रात्रिचर स्वभाव वाले।
- तेज दौड़ने वाले।
- लंबी टांगो वाले।
- अधिकांश जीव गाढ़े (सान्द्र) भूस का उत्सर्जन करते हैं।



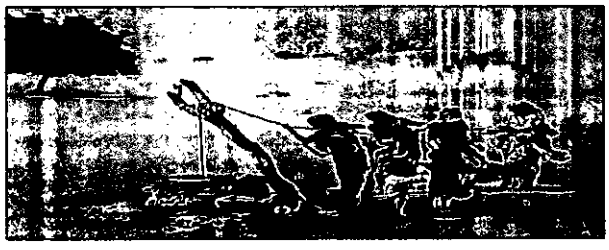
मरूस्थलीय पारितंत्र के मुख्य विशेषताएं -

- वाष्पीकरण अधिक व शुष्क रहती है।
- ज्यादातर भूमि चट्टानी, पथरीली, रेतीली होती है।
- 500 सेण्टीग्रेड से अधिक तापमान।
- मृदा में पोषक तत्वों की अधिकता होती है व जैव पदार्थों की कमी या न्यूनता होती है।
- कार्बनिक व अकार्बनिक पदार्थों की कमी होती है।
- मरूस्थलीय पारितंत्र के अनुकूलन में जीवित रहने वाले, जीव-जन्तु व पादप ही यहां पर जिवास करते हैं।
- तेल व प्राकृतिक गैस के भण्डार पाए जाते है।
- 10.20% ऊपरी परत रेत तथा शेष भाग पर बजरी कंकड़, पत्थर पर्वत खण्ड या अन्य प्रकार की मिट्टी होती है।
- लवण, खनिज व यूरेनियम का भण्डार पाया जाता है।
- वायु अपरदन से निर्मित बहुत सी आकृतियां देखने को मिलती है।

भारतीय मरूस्थल पारितंत्र
(India Desert Ecosystem)

भारतीय मरूस्थल में महान/विशाल कहा जाता है जो राजस्थान में अरावली पर्वत के पश्चिमी भाग में फैला हुआ है। यह एक संकीर्ण कटा-छंटा (उबड़-खाबड़) भूतल है। जिस पर बहुत से अनुदैर्ध्य रेतीले टीलेटे बरखान, छŸोक मरूउद्यान बालू के टीले आदि पाए जाते हैं।

यहां की पारिस्थितिकीय दशायें अत्यंत विषम होती है, तापमान, वाष्पीकरण शुष्क वायु, दैनिक, वार्षिक तापान्तर बहुत अधिक वर्षा होती है। यहां पर वार्षिक वर्षा 150 मिलीमीटर से भी कम, नमी की न्यूनमात्रा था रेत चलाये मान होती है। जिसके कारण इन्हे वनस्पति रहित क्षेत्र में सम्मिलित किया जाता है। यहां केवल, कंटीली झांड़िया, खुले घास पाए जाते है। फसलें - जवार, बाजरा, मक्का, गेहूं, जौ आदि।



- क्षेत्रफल -317090 वर्ग कि.मी. तक फैला है।
- उत्पति - मेसाजोईक काल में उस समय यह क्षेत्र समुद्र का हिस्सा था। इसकी पुष्टि जैसलमेर के आकल में स्थित काष्ठ जीवाश्म मार्क (Akal wood Fossil Park) में उपलब्ध प्रमाणों से होती है।
- नदी- लूनी नदी महत्वपूर्ण है, जो मरूस्थल में लुप्त हो जाती है अधिकांशतः खारे पानी की झीलें देखने को मिलती है।

निष्कर्ष- पर्यावरण तथा पृथ्वी पर निवासरत सजीव, निर्जीव जीवों तथा पादपों के मध्य संबंधों का किसी न किसी रूप में, अध्ययन भूगोल प्रमुख केंद्रीय विषय रहा है। फिर चाहे वह मरूस्थल जैसे पारितंत्र ही क्यों न हो। वर्तमान में जलवायु परिवर्तन ने हमें प्रकृति प्रेमी होने का एहसास दिला दिया है। लोगों को अब प्राकृति के साथ छेड़-छाड़ कम कर देना चाहिए क्योंकि ऐसा न हो तो मरूस्थल भाग, अपने मरूस्थलीकरण रूप में आगे बढ जाएगा।

संदर्भ ग्रंथ (1) पर्यावरण भूगोल- संविद्र सिंह
(2) पारिस्थितिकी एवं पर्यावरण भूगोल- पी.एस. नेगी।

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Saahity Aur Patrakaarita Ka Antarsambandh

(साहित्य और पत्रकारिता का अंतर्सम्बन्ध)

डॉ. सुषमा शर्मा
सहा. प्राध्यापक समाजशास्त्र
डी.पी. विप्र महाविद्यालय
बिलासुपर (छ.ग)

प्रस्तुत शोध आलेख पत्रकारिता और साहित्य के अंतर्सम्बंधों का विष्लेशण साहित्य और पत्रकारिता के पूर्व और वर्तमान के वैचारिकी और अभिव्यक्ति के अपने तरीकों को स्पश्ट करता है।

सूचना और प्रौद्योगिकी के युग में पत्रकारिता एक महत्वपूर्ण विशय के रूप में मानव सभ्यता के विकास मे अहम् भूमिका का निर्वहन कर रही है। आधुनिक पत्रकारिता समाचार-पत्रों एवं पत्रिकाओं तक सीमित नहीं है। आज के दौर में डिजिटल व सोषल मीडिया पर पत्रकारिता के बढ़ते वर्चस्व को नजरंदाज नहीं किया जा सकता । रेडियों, टेलिविजन एवसं इंटरनेट जनसंचार के माध्यमों के रूप में पत्रकारिता का व्यापक रूप नहीं था, नवीनतम सूचनाओं के संप्रेशण का प्रमुख अंग पत्रकारिता का स्वरूप भी बदलने लगा और चर्चाएं गम्भीर होने लगी। भारत में जहां साहित्यकारों द्वारा पत्रकारिता को तुलनात्मक रूप से साहित्य से कमतर आंकने की सोच रहीं है, इसका कारण पत्रकारिता का साहित्य के समान ही एक स्वतंत्र विधा होना माना जाता था और व्यावसायिक रूप से भी पत्रकारिता किसी भी अन्य बौद्धिक व्यसाय से कमतर नहीं थी।

कहा जाता है कि साहित्य समाज का दर्पण होता है। पत्रकारिता भी साहित्य की तरह समाज का एक ऐसा दर्पण है जिसमें समाज मे घटित घटनाओं को देखा जा सकता है। अकबर इलाहाबादी ने लिखा था- ''साहित्य और पत्रकारिता का अटूट संबंध है।'' ये दानों एक ही सिक्के के दो पहलू है। पत्रकारिता के विविध रूपों में से एक साहित्यिक पत्रकारिता भी है। साहित्यिक पत्रकारिता के अन्तर्गत पत्र-पत्रिकाएॅ आती है।, जिनमें साहित्य की विविध विधाओं का प्रकाषन, नवीन पुस्तकों का लेखन, साहित्यिक गोश्ठियॉ, पुस्तक प्रदर्षनी, पुरस्कार, साहित्य से जुड़े समाचार आदि आते हैं।

भारत में 1780 ई. में 'हिक्कीज गजट' प्रकाषित हुआ था जो अंग्रेजी भाशा में था। भारत में हिन्दी पत्रकारिता की षुरूआत 30 मई 1826 ई. में पं. जुगल किषोर के विषेश प्रयत्नों के द्वारा साप्ताहिक पत्र के रूप में हुआ था। हिन्दी साहित्यिक पत्रकारिता का प्रारम्भ भारतेन्दु युग की 1868 ई. में प्रकाषित पत्रिका 'कविवचन सुधा' से हुई। भारतेन्दु युग से लेकर अब तक अनेक साहित्यिक पत्र-पित्रकाए पाठकों के समक्ष आ चुकी हैं, उनमें से प्रमुख रूप से 'कविवचन सुधा', 'सुधावर्शण', 'हिन्दी प्रदीप', 'सरस्वती', हंस, 'इंदु', चांद, नया प्रतीक, माया, नया ज्ञानोदय, सारिका, कथादेष, यू.एस.एम., 'प्राची', 'वर्तमान साहित्य' और 'आलोचना' आदि है।

पत्रकारिता के प्रति साहित्यकारों का आकर्शण आरम्भ से ही रहा है। पत्रकारिता और साहित्य अंतर्सम्बंध पष्चिमी देषों की अपेक्षा भारत में अधिक स्पश्ट है। बालकृश्ण राव ने लिखा था - '' समसामयिक परिवेष से किसी न किसी रूप में प्रेरणा लेता है, वह चाहे साहित्यकार हो या पत्रकार । दोनों ही लेखक है, सर्जक है और दोनों के कार्य ऐसे गुणो की अपेक्षा करते है। जो व्यापक सामाजिक दृश्टि, चिंतन एवं सम्प्रेशणीयता के प्रति आपरिहार्य है। प्रत्येक साहित्यकार अंषतः पत्रकार है और प्रत्येक पत्रकार अंषतः साहित्यकार है।'

पत्रकार का ध्येय यथार्थ को सामने लाना होता है तो साहित्यकार का एक आदर्ष को प्रस्तुत करना।

पं. कमलापति षास्त्री ने पत्रकारिता और साहित्य की एकरूपता की व्याख्या करते हुए कहा है- ''जीवन और जगत की पारस्परिक घात-प्रतिघात और दोनों का वास्तविक रूप जिसके अंतस्थल में भावनाओं कल्पनाओं, विचारों और आदर्ष का सर्जन होता है। पत्रकार और साहित्यकार के लिए प्रेरणादायी होते हैं।

स्वतंत्रता आन्दोलन के दौरान नामधन्य साहित्यकारों जैसे-भारतेन्दु हरिष्चन्द्र, महावीर प्रसाद द्विवेदी, बालकृष्ण शर्मा 'नवीन', प्रतापनारायण मिश्र, बाबूराव विष्णु पराडकर, माखनलाल चतुर्वेदी आदि ने साहित्यिक पत्रिकाओं के माध्यम से युगातीन

साहित्य सृजन किया। परन्तु जब स्वतंत्रता प्राप्ति के बाद पत्रकारिता का व्यावसायीकरण हुआ तो उनके द्वारा संचालित साहित्यिक पत्रकारिता धीरे-धीरे समाप्ति की ओर जाने लगी। पष्चिमी देषों में इस तरह का परिवर्तन देखने को नहीं मिलता। वहां शुरूआत से ही साहित्य और पत्रकारिता के बीच एक निष्चित दूरी रही। स्वतंत्रता प्राप्ति के बाद पत्रकारिता और साहित्य के अन्तर्संबंधो में तेजी से बदलाव आया है। इस संबंध में पत्रकार अक्षय कुमार जैन जो एक साहित्यकार भी थे, ने कहा था- ''यद्यपि'' हमारे देष मे नहीं मानते पर आज संसार में सब कहीं जर्नलिस्टिकि राइटिंग को साहित्य मान लिया गया है। इसलिए मै मानता हू कि साहित्य भी अपने आप में साहित्य ही है साहित्य का मतलब केवल कविता, कहानी, नाटक उपन्यास या निबंध से नहीं है। साहित्य का मतलब है कि कोई भी सर्जनात्मक सामग्री।

साहित्यकार और पत्रकार का रचनाधर्मिता का क्षेत्र पृथक-पृथक होते हुए भी दोनों में चोली-दामन का साथ है। दोनों ही सम सामयिक समाज का प्रतिनिधित्व करते हुए समाज और देष हित में सामाजिक मूल्यों को दिषा प्रदान करते हैं। दोनों ही समाज की आवाजको बुलंद करने में अपना अमूल्य योगदान देते हैं। साहित्य और पत्रकारिता शोषण विहिन समाज की स्थापना कर समाज में जनजागरण का कार्य करते हैं। हिन्दी की साहित्यिक पत्रकारिता हिन्दी साहित्य के विकास का महत्वपूर्ण हिस्सा है। दोनों ही परस्पर एक दूसरे का आइना हैं। जनता के सुख-दुख की आवाज को अपनी लेखनी के माध्यम से व्यक्त कर समाज को सही दिषा प्रदान करने में अपनी अहम् भूमिका निभाते है। एक पत्रकार में लेखक, साहित्यकार और रचनाकर्मी के सभी गुण मौजूद होते है। आजादी के आन्दोलन में पत्रकार और साहित्यकार समान रूप से प्रतिनिधित्व करते थे। लोकमान्य तिलक, महावीर प्रसाद द्विवेदी, वियोगी हरि, डॉ. राजेन्द्र प्रसाद, डॉ. राममनोहर लोहिया आदि स्वतंत्रता सेनानियों के साथ पत्रकार और लेखक भी समान रूप से चर्चित थे।

उन्होंने अपनी लेखनी के बल पर देषवासियों में आन्दोलन का जज्बा जगाया था। एक पत्रकार मे कवि, लेखक, कहानीकार आदि सभी गुण समाहित होता था। वे समय-समय पर अपनी लेखनी के माध्यम से लेखक, कहानीकार, कवि भी बन जाते है। महात्मा गंाधी, लोकमान्य तिलक आदि भी इसी तरह के पत्रकार थे।

आधुनिक भारत में विद्यानिवास मिश्र, अज्ञेय, भारतेन्दु रधुबीर सहाय, कमलेष्वर, श्याममनोहर जोषी, सुषवंत सिंह, कुलदीप नैयर, डॉ. कन्हैयालाल नंदन, डॉ. वेदप्रताप वैदिक आदि इसी श्रेणी के पत्रकार रहे हैं जिन्होने लेखक और पत्रकार के दायित्व का निर्वहन समान रूप से किया। आज भी बहुत से साहित्यकार पत्रकार के रूप में चर्चित है। अतः साहित्य और पत्रकारिता के सम्बन्ध इतने गहन हैं कि उन्हें एक दूसरे से अलग कर पाना मुष्किल है।

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Bhaarat Cheen Sambandh: Covid-19 Ke Vishesh Sandarbh Mein

(भारत चीन संबंध: कोविड-19 के विशेष संदर्भ में)

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''भारत एवं चीन'' संबंध कोविड-19 के विशेष संदर्भ में पी.एच.डी. शोध हेतु इस विषय को मैने चुना वर्तमान में पूरे विश्व में इस ज्वलंत समस्या को लेकर एक हलचल सी मची हुई है। इन दोनो देशों में प्राचीन काल से ही सांस्कृतिक तथा आर्थिक संबंध रहे है। भारत में बौद्ध धर्म का प्रचार चीन की भूमि पर हुआ है। चीन के लोगो ने प्राचीन काल से ही बौद्ध धर्म की शिक्षा ग्रहण करने के लिए भारत के विश्व विद्यालयों अर्थात नालन्दा विश्वविद्यालय एवं तक्षशिला विश्वविद्यालय को चुना था। क्योकि उस समय संसार में अपने तरह के यही दो विश्वविद्यालय शिक्षा के महत्वपूर्ण केन्द्र थे।

1946 में चीन के साम्यवादी शासन की स्थापना हुई। दोनो देशो के मध्य मैत्री बराबर बनी रही । 1949 में नये चीन की स्थापना के बाद अगले वर्ष भारत ने चीन के साथ राजनैतिक सम्बन्ध स्थापित किये। इस तरह भारत चीन लोक गणराज्य को मान्यता देने वाला पहला गैर समाजवादी राज्य बना।

जून 1954 में भारत व म्यांमार द्वारा शांतिपूर्ण सहअस्तित्व के पांच सिद्धांत यानी पंचशील प्रवर्तित किये गये। पंचशील सिद्धांत भारत व चीन के द्वारा दुनिया की शांति व सुरक्षा में किया गया एक महत्वपूर्ण योगदान था।

चीन ने मैत्री संबंधो को ताक पर रख कर 1962 में भारत पर आक्रमण कर दिया और भारत की बहुत सारी जमीन पर कब्जा करते हुए 21 नवंबर 1962 को एक पक्षीय युद्ध विराम की घोषणा कर दी। उसके बाद दोनो देशो के संबंध सामान्य नही हो पाये है। पं. जवाहरलाल नेहरू की मृत्यु के बाद लाल बहादुर शास्त्री ने चीन से दोस्ती का हाथ बढ़ाया सफलता नही मिली। 1965 के भारत पाक युद्ध में चीन ने पाक का समर्थन किया। चीन के शक्तिशाली नेता राष्ट्रपति जियांग जोमीन ने जब 1960 में भारत दौरे पर आए और एक सहमति दिया एक दूसरे देश आक्रमण नहीं करेगी।

70 के दशक के मध्य तक भारत चीन के सम्बन्ध शीत काल से निकलकर शामिल हुआ। 1980 में दोनो के सम्बन्ध में सुधार हुआ। 1998 में फिर से तनाव पैदा हुआ, भारत 11 से 13 मई 1998 के मध्य अटल बिहारी के शासनकाल में परमाणु विस्फोट कर शस्त्र धारक देश भारत ने घोषित किया। चीन अमेरिका एवं अन्य देशो से मिलकर एन.पी.टी./सी.टी.बी.टी. पर हस्ताक्षर करने के लिए भारत को बाहर किया गया।

05 जुन 1998 को चीन द्वारा दबाव बनाया। यू.एन.ओ. द्वारा परीक्षण बंद करने तथा हस्ताक्षर करने का प्रस्ताव पास कराया। अक्टूबर 1998 में दलाईलामा + बाजपेयी मुलामत की निंदा की। 1996 में बीजिंग में 11वीं बैठक हुई। सुधार सम्बन्धों में दिखाई देने लगा। जून 1996 में विदेश मंत्री जसवंत सिंह ने चीन की यात्रा कर आर्थिक/सामाजिक/सांस्कृतिक सहयोग विकसित करने की दिशा में कदम उठाया। 2000 में W.T.O. के साथ चीन को बनाने समर्थन किया। 2001 में चीनी नेता लीफंग भारत आए। 2002 में चीनी प्रधानमंत्री जू रोंग भारत की यात्रा की, उन्होने भारत चीन सम्बन्धों पर हस्ताक्षर किये। 2003 में अटल बिहारी और चीनी प्रधानमंत्री वन चा पावो के मध्य भारत$चीन संबंधों पर चर्चा हुई।

2005-10 चीनी प्रधानमंत्री की भारत यात्रा। 2006 में राष्ट्रपति चाइना हू जिन्ताओ भारत यात्रा, 2008 में चीन की यात्रा मनमोहन सिंह जी के द्वारा की गई। 2013 में प्रधानमंत्री लीख छपांग भारत यात्रा किम्स शिखर बैठक में मिले।

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2011 में डॉ. मनमोहन सिंह चीन दौरा किए। भारत एवं चीन के मध्य प्राचीन से चली आ रही मैत्री व आधुनिक काल में अस्थिर दौर से गुजर रही है। भारत चीन सीमा विवाद आज तक बना हुआ है। 2014 में नरेन्द्र मोदी भारत के प्रधानमंत्री बने तो पूरा देश भारत के लिए संभावनाए दिखा रहे थे। सितंबर 2014 में चीन के राष्ट्रपति अहमदाबाद पहुंचे। कैलाश मानसरोवर यात्रा के संदर्भ और रेल्वे में सहयोग समेत 12 समझौते पर हस्ताक्षर किए। 18 जून 2017 को डोकलाम सीमा विवाद से तनाव प्रारंभ 73 दिनो तक विवाद चला भारत, चीन के मध्य अरबो डालर का व्यपार था। 2014 में चीन ने 116 बिलियन डालर का निवेश किया जो 2017 में 160 बिलियन डालर गया। भारत चीन का उभरता हुआ व्यापार था। भारत में चीनी टेलीकाम मोबाईल मार्केट भी बहुत बढ़ा है। भारत का थर्मल पावर भी चीन पर निर्भर है। पावर सेक्टर के 70/80 उत्पाद चीन से आते है। 2018-198 में भारत का व्यपार घटा 52 अरब डालर रहा। कोरोना वायरस कोविड-19 के संक्रमण काल से सर्वाधिक प्रभावित रहे मध्य चीन के हुबेई प्रान्त की राजधानी वुहान से प्रारंभ हुआ। वुहान में फंसे 324 भारतीय को भारत लाया गया। 01 फरवरी 2020 को लगातार पूरे विश्व में ये वाईरस अपने जाल में फंसायी फैल रहा है और लगातार मौतो का आकड़ा बढ़ता जा रहा है। भारत में 26 मार्च से पूर्ण लॉकडाउन कर दिया गया था 21 दिन का लाकडाउन लेकिन चीन के वुहान शहर से जो वायरस फैला वे आज पूरी दुनिया को अपने चपेट में ले चुकी है। चीन में 15 मई 2020 को 81 हजार मरीज होने में 176 दिन लगे थे वे भारत में 106 दिन लगे। चीन में सिर्फ एक प्रान्त में रहा। भारत के सभी बड़े राज्य प्रभावित रहे। चीन में सिर्फ 104 केस 15 मार्च तक थे और भारत में 50,733 केस हो चुके थे।

एक ऐसे समय में जब विश्व व्यवस्था को इस वैश्विक महामारी से निपटने के लिए आपसी सहयोग, समन्वय एवं सहमत की आवश्यकता है दो बड़े राष्ट्र भारत+चीन सीमा विवाद के कारण आपस में उलझे हीं हैं। विवसाद का कारण अक्साई चीन में गालवन घाटी है। जिसे लेकर दोनों सेना आमने सामने है। उपरोक्त घटनाएं भारत $ चीन के मध्य सीमा विवाद का प्रत्यक्ष उदाहरण है- एप बैन डी चीन को याद आया द्विपक्षीय रिश्ते बहिस्कार से चीन घबराया। कोविड-19 का कहर सबसे ज्यादा अमेरिका में है। जिसमें अमेरिकन सहित पूरे विश्व में देश अमेरिका के खिलाफ खड़े हो गये है।

इस बीच 15 जून को भारत चीन के सैनिको के मध्य गलवान घाटी में झड़प हुई जिसमें भारतीय 20 सैनिक शहीद हो गये चीन के भी 42 सैनिक मारे गये हैं। अनेक समझौते चीन के साथ हुए थे जो कि चीन को आर्थिक रूप से नुकसान हो वे सभी करार रद्द किये जा रहे है। महाराष्ट्र ने 23 जून 2020 को 5 हजार करोड़ के चीनी करार रोके तनाव बढ़ता जा रहा है। चीन द्वारा करोना जैसे वैश्विक महामारी को ध्यान भटकाने लगातार अपने पड़ोसी देशों के साथ सीमाविवाद को तय कर दिया है। भारतीय सेना ने निगरानी बढ़ा दी है।

इधर अमेरिकी सेना चीन के खिलाफ है। हांगकांग पर चीन को भी झटका लगा है। 27 जून को भारत ने चीन को दो टूक कहा कि समझौते का पालन करना होगा भारत ने एयर डिफेंस मिसाइल तैनात कर दी है। चीन की इन हरकतों के कारण अमेरिका जापान की कंपनिया चीन से जा रही है। और भरत के स्थापित करने को जोर दे रही है। इससे भी चीन बौखलाया हुआ है। टीकरांक समेत 59 चीनी एप् पी पांबदी को लेकर भी चाइना बौखलाया हुआ है। इस बीच दोनों देशों के मध्य कमांडर स्तर के तीसरे दौर के बैठक में भारत ने आप जताई।

4 जुलाई को देश के प्रधानमंत्री मोदी जी ने विस्तारवादी नीति बोल चीन को चुनौती दी लेह, कारगिल, सियाचीन तक बर्फीली चोटियों से लेकर गलवान घाटी के ठंडे पानी की धारा तक भारतीय पराक्रम की गवाही दे रहा है। इस बीच दोनों देशों के डिप्लोमैटिक और आर्मी लेवल की मिटिंग के साथ 2 कि.मी. पीछे चीनी सैनिक पीछे हटे है। इस तरह से कोविड-19 के इस वैश्विक महामारी के चलते भारत+चीन का सम्बंधों में खटास आ चुकी है।

भारत चीन सम्बंध करोना कोविड-19 के विशेष संदर्भ में है। निश्चित रूप से इस वैश्विक महामारी में जिस तरह की नीति भारत ने चीन के साथ की है। वो भारत में देश के विदेशनीति की दृष्टि से काबिले तारीफ है। इसका उद्देश्य विश्व में भारत के प्रति जिस तरह से शक्तिशाली राष्ट्रों का भारत का समर्थन करना चाहे अमेरिका, जापान, ब्रिटेन आस्ट्रेलिया या रूस ही क्यों नहीं इस करोना काल में भारत के विश्व मानव की सेवा कर (दवाई भेज) एक मिशाल कायम किया है।

1. कोविड 19 के चलते भारत विश्व को इसे समाप्त करने में अपना विशेष योगदान देना।

2. चीन को जो कि पड़ोसी देशों के प्रति विस्तारवादी नीति अपना रही है। उसे समाप्त करना।

भारत चीन के सम्बंधों की कोविड-19 का क्या प्रभाव पड़ा इसके आकड़े एकत्र किये जावेंगे, आर्थिक, सामायिक, राजनीतिक स्थिति का आकलन कर इसका अध्ययन किया जावेगा।

मूल्यांकन

इस विषय का भारत+चीन सम्बंधो में जिस तरह से चीन द्वारा विस्तारवादी नीति के बढ़ावा देने का काम कर रही है। उसके चलते पूरे विश्व जगत में चीन के इस बात का खुलासा होगा कि कोविड-19 का वायरस जो चीन से निकला था, जिसके चलते पूरे विश्व में लाखों लोग मौत के मुंह में समा गए है। भारत के विश्व स्वास्थ्य संगठन का कमान भारत के हाथों में आने से कई संभावना बढ़ गई है। वहीं अमेरिका के द्वारा W.H.O. को फंडिग बंद कर सीधा संदेश दिया कि W.H.O. चीन को बचा रहा है।

इस अध्ययन का प्रमुख उद्देश्य भारत$चीन के सम्बंध कोविड-19 के चलते चीन की जो भारत के प्रति नीति है। दोगलेपन की है। और जो विस्तारवादी नीति को विश्व समुदाय के समक्ष लाना प्रमुख उद्देश्य है।

संदर्भ गंथ -

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4. लोकप्रशासन - अवस्थि माहेश्वरी - साहित्य भवन पब्लिकेशन आगरा

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Chh.Ga Panchaayatee Raaj Mein Mahilao Kee Bhoomika

(छ.ग पंचायती राज में महिलाओ की भूमिका)

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सारांश:- जब भारत स्वतंत्र हुआ तो भारत देश में लोकतंत्र व्यवस्था को अपनाया गया जहा पर नागरिको को समान अधिकार प्राप्त हो और समान अवसर प्राप्त हो। साथ ही महिलाओ को भी उनके अधिकार दिलाने तथा उनकी भी हर क्षेत्र में सहभागिता सुनिश्चित करने के लिए पंचायती राज व्यवस्था में उनको आरक्षण दिया गया। जिसके माध्यम से महिला सशक्तिकरण में वृद्धि किया जा सके। सन् 1993 के 73वां संविधान संशोधन अधिनियम के तहत पंचायती राज व्यवस्था को लागू किया गया, जो कि त्रिस्तरीय था - जिला पंचायत, जनपद पंचायत एवं ग्राम पंचायत। केन्द्रीय मंत्री मण्डल ने 27 अगस्त 2009 को पंचायतों में महिलाओं का आरक्षण 33 प्रतिशत से बढ़ाकर 50 प्रतिशत करने का निर्णय लिया। महिलाओ की दयनीय स्थिति को देखते हुए स्वतंत्र भारत के संविधान निर्माताओं ने सामाजिक न्याय के अन्तर्गत विकास के सभी प्रक्रियाओं में महिलाओं की व्यापक भागीदारी को आवश्यक माना ताकि सामाजिक, भौतिक व राजनीतिक दृष्टि से सशक्त भारत का निर्माण किया जा सके। महिला जागरूकता, महिला सशक्तिकरण, राजनीतिक नेतृत्व, महिला प्रतिनिधित्व, महिलाओं की राजनीतिक भूमिका को पंचायती राज व्यवस्था के माध्यम से सुदृढ़ किया जा सकता है।

उद्देश्य:-

- महिलाओं में राजनीतिक जागरूकता लाना।
- महिला सशक्तिकरण में वृद्धि करना।
- महिलाओं को राजनीतिक क्षेत्र में पुरूषो के समान अवसर उपलब्ध कराना।
- महिलाओं की राजनीतिक भूमिका एवं प्रतिनिधित्व का विकास करना।

की-वर्ड:- महिला नेतृत्व, महिला सशक्तिकरण, राजनीतिक जागरूकता, महिला प्रतिनिधित्व

पंचायती राज में महिलाओं की भूमिका:-

देश में आधी आबादी महिलाओ की है तो क्या देश का समग्र विकास महिलाओं की भागीदारी के बिना सभव है नही इसलिये ये स्वाभाविक है कि उन्हें भी देश के विकास में पुरूषों के समान भूमिका निभाने के अवसर मिलना चाहिए।

नवीन पंचायती राज व्यवस्था में ठेठ पंरपरावादी भारतीय समाज में ग्रामीण महिलाएं जो बिना घुंघट निकाले घर की दहलीज तक नही लॉघती थी वे संयुक्त राष्ट्र संघ न्यूयॉर्क जाने लगी। सक्रिय राजनिति में महिलाओं का प्रवेश उत्सुकता व जागरूकता का तो परिचायक है पर जब भी अधिकांश पंचायतों में उनकी पहचान या तो परिवार के पुरूषों से ही होती थी या किसी प्रभावशाली स्oाoिoानीय नेताओं से प्राप्त अभयदारन द्वारा जीतती थी। अब उनके सफलता के पीछे उनका स्वयं का व्यक्तित्व, राजनितिक जागरूकता, नेतृत्व की क्षमता, मतदाताओं पर सार्वजनिक कार्यो में उनका स्वयं का योगदान है।

पूरी प्रक्रिया की एक ठोस सच्चाई यह भी है कि पुरूष अपनी इच्छा से नही मजबूरी से ही पंचायती राज की उपलब्धियों से सामाजिक परिवर्तन की झलक साफ दिखाई देने लगी है। स्व समुदाय गठित कर समुदाय विकास कर स्वयं

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अंगूठा लगाना जानती आंध्रप्रदेश की महिला सरपंच फातिमा बी (यू.एन.डी.पी.) निर्धनता विरूध्द अभियान का पुरूस्कार प्राप्त किया।

आंकड़े बताते है और यह वास्तविक भी है कि आज पहले के मुकाबले में राजनीति में काफी संख्या में महिलाएं आ रही हैं और वे सफल भी हो रही हैं। आज की महिला राजनितिज्ञ अपनी राजनैतिक कुशलता और सूझबूझ के मामले में किसी से कम नही है ंमहिलाओं की राजनैतिक उपलब्धियॉ उल्लेखनीय है एवं रेखाकिंत करने योग्य है इन सब के बावजूद इनकी राजनैतिक डगर काफी कठिन एवं पथरीली है।

महिला राजनितिज्ञों में कुशलता भी है और चतुराई भी लेकिन उनकी संख्या अपेक्षित स्तर पर नही है। बहुत सी युवतियॉ राजनैतिक डगर पर चलने का प्रयास करती है, यही कारण है कि महिलाएं राष्ट्रीय स्तर पर अपेक्षित संख्या में राजनिति में भागीदारी नहीं पा रही है। आज महिलाओं को यदि राजनिति में भागीदारी एवं सत्ता में हिस्सेदारी नही मिल पा रही है तो इसके अपने कारण हैं। महिलाओं की राजनैतिक सफलता में बाधा बने ये कारण कुछ तो प्राकृतिक हैं तो कुछ मानव निर्मित है। इस क्षेत्र में महिलाओं के लिए सबसे बडी रूकावट है इनमें राजनैतिक सोच, राजनैतिक विचारधारा, और राजनैतिक जागरूकता की कमी होना। यूं तो राजनिति का क्षेत्र प्राकृतिक रूप से काफी कठिन होता है इसमें अपनी जगह बनाने के लिए महिलाओं को काफी संघर्ष करना पड़ता है और महिलाओं के लिए तो यह राह और भी कठिन होती है। राजनिति में अपनी जगह बनाने की महत्वकांक्षा रखने वाली महिलाओं के सामने कई ऐसी समस्याएं भी होती है जिनका सामना उन्हें सिर्फ इसलिए करना पड़ता है क्योंकि वे महिला है।

हमारे देश में बालिका शिक्षा की क्या स्थिति है यह सभी जानते है आजादी के 62 साल बाद भी भारत में 6 से 16 वर्ष की आयु की 40 प्रतिशत बालिकाए है जिन्हे विद्यालय जाने का मौका ही नही मिलता, जिन्हे अवसर मिलता भी है तो वे अपनी शिक्षा जारी नही रख पाती। ये तो है सरकारी आंकड़े की कहानी वास्तविकता तो इससे भी अधिक बदतर है इस स्त्री अशिक्षा के कई कारण है। आज भी निम्न वर्ग एवं निम्न मध्यम वर्ग में बालिका शिक्षा को आवश्यक नही समझते है, पढ लिखकर भी उन्हें विवाह करना है, घर गृहस्थी बसानी होगी। परिवार के लिए जिम्मेदारी वहन करनी होगी, अपने बच्चों को पालन पोषण करना होगा। इन परिवारों को मानना है कि बालिकाओं के लिए शिक्षा नही संस्कार आवश्यक है। सरकारी आंकडों के मुताबिक 100 बालिकाओं में से 62 बालिका प्राथमिक विद्यालय में पंजीकृत होती है, 30 प्रतिशत मिडिल स्कूल की दहलीज चढ पाती है, 35.3 प्रतिशत बालिकाएं माध्यमिक शिक्षा प्राप्त कर सकती है। महानगरों में भी 7 प्रतिशत लडकियॉ विश्वविद्यालय की सीढियॉ चढ पाती है हमारे यहॉ स्त्री अशिक्षा के लिए आर्थिक, सामाजिक कारण तो दोषी है ही साथ ही संस्थाओं की कमी भी एक प्रमुख कारण है। एक अनुमान के मुताबिक भारत में कुल गॉवों में से बहुत से गॉव ऐसे है जिनमें प्राथमिक विद्यालय नही है और जहां विद्यालय है वहां पर्याप्त अध्यापक एवं सुविधा उपलब्ध नही है, और संसाधनों की कमी के कारण हमारी ग्रामीण बालिकाएं पढाई लिखाई छोडकर घर की दहलीज तक सिमट जाती है।

जब भारतीय महिलाओ की औपचारिक एवं परंपरागत शिक्षा का ये हाल है तो उनसे राजनैतिक शिक्षा की उम्मीद करना बेमानी है। राजनैतिक शिक्षा के अभाव में आम भारतीय महिलाओं की न तो राजनैतिक सोच होती है और न ही राजनैतिक विचारधारा। जिसका असर स्पष्ट रूप से भारतीय परिवारों में देखा जा सकता है। गॉव के परिवार के महिलाओं को छोड़ शहरी महिलाओं में देखों तो वे उसी उम्मीदवार को वोट देती है जिन्हें उनके परिवार जन या पति कहते है। शिक्षा के साथ-साथा राजनितिज्ञ जागरूकता की अभाव भी महिलाओं की राजनितिक प्रगति मं आडे आती है। मनी मसल्स और मेन पावर की तिकड़ी ने आज हमारी समूची चुनाव प्रणाली को ध्वस्त कर दिया है। राजनिति में बढते धन और बढते अपराध के प्रभाव के कारण आज हमारा समूचा चुनावतंत्र गडबडा गया है, फलस्वरूप लोकतंत्र से लोगो का विश्वास उठने लगा है इस चुनावी प्रवृत्ति का सबसे बुरा असर महिलाओं की राजनितिक डगर पर पडा है। धन बल, बाहु बल, के अभाव में महिलाएं चुनावी वैतरणी पार करने में असमर्थ होती है, जिसके कारण उनकी सत्ता में भागीदारी का स्वप्न मात्र सपना ही रह गया।

राजनितिक सत्ता पर पहुचने का एकमात्र रास्ता चुनाव लडना और बहुमत का समर्थन प्राप्त करना होता है। लोकतंत्र में चुनाव लडे बिना और बहुमत प्राप्त किये बिना सत्ता तक पहुंचना संभव नही है। और यह केवल योग्यता के बल पर संभव नही है। इसलिये आवश्यकता पडती है बेशुमार धन और अपराधियों के साथ की। आज चुनाव जीतना व्यवहारतः एक व्यवसायिक उद्यम है जिसमें चुनाव कोष के रूप में पूंजी विनियोग की और कर्मचारियों के एक विशिष्ठ संगठन की

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आवश्यकता होती है महिलाएं आर्थिक रूप से कम ही आत्मनिर्भर है। जिसके कारण वे चुनाव के दौड में पीछे रह जाती है। समाज के बाहुबली भी महिलाओ की सहायता करना पसंद नही करते या महिलाएं ही अपराधियों का सहयोग लेना पसंद नही करती। वे स्वभाव से ही कोमल और संवेदनशील होती है और अपराधी व अपराध उनकी मानसिकता से मेल नही खाते और जब अपराधियों का साथ मिलेगा तो सत्ता में भागीदारी कैसे प्राप्त होगी

सुदृढ़ लोकतंत्र के खुशहाली एवं लोकतंत्रीय शासन व्यवस्था की सुदृढ़ता के लिए महिला पुरूष के अंतर को मिटाना यह भारतीयों का कर्तव्य है। महिलाएं शासन-प्रशासन के कार्यो में पर्याप्त भागीदारी के साथ ही साथ 73 वें, 74 वें, संविधान संशोधन के माध्यम से पंचायती राज की स्थापना के लक्ष्य में महिलाओं की वर्तमान भागीदारी 50 प्रतिशत कर दिया गया जो काफी हद तक ग्रामीण महिलाओं में राजनितिक विकास हेतु अग्रगामी भूमिका अदा करेगी साथ ही साथ महिलाओं के संविधान के मुख्य अंग विधायिका में पर्याप्त भागीदारी हेतु 108 वॉ संविधान संशोधन विधेयक राज्य सभा में प्रस्तुत किया गया है वह महिलाओं के राजनितिक स्थिति की सुदृढ़ता के लिए कारगर सावित होगा। इस अधिनियम में संविधान के अनुच्छेद 239 कक, 331 और 333 में संशोधन किया जायेगा इसी अनुच्छेद 330 के पश्चात् एक नया 330 (क) एवं 332 बाद 332 (क) और 334 के बाद 334 (क) जोड़कर महिलाओं के सीटें आरक्षित करने की व्यवस्था की गई है।

इस प्रकार भारतीय विधायिका में महिलाओं की समुचित भागीदारी सुदृढ़ लोकतंत्र के लिए एक क्रांतिकारी प्रभाव होगी जिससे महिलाओं में पर्याप्त चेतना एवं जागृति उत्पन्न होगी।

" बुलंद है, तो बुलंदी की सैर करने दो, खुली फिजा में मुझे उड़ान भरने दो। "

राजनिति में महिलाओं की पर्याप्त भागीदारी और सत्ता में समान, हिस्सेदारी के बिना हमारी आधुनिकता, विकास और सभ्यता सब कुछ बेमानी है, बेमतलब है इसलिए राजनिति में पर्याप्त भागीदारी के लिए समाज के सभी वर्गो को प्रयास करने होंगे, हम सभी को अपनी-अपनी जिम्मेदारी का निर्वहन करना होगा।

प्रस्तुत शोध में एक आम भारतीय महिला की रोजमर्रा की जिंदगी में विभिन्न् पहलुओं पर रोशनी डालने का प्रयास किया गया है। वैदिक युग से लेकर आज तक के अत्याधुनिक युग में, महिलाओं की सामाजिक, धार्मिक, पारिवारिक और राजनितिक स्थिति में आये बदलावों की मीमांसा करने का छोटा सा प्रयतन है।

महात्मा मनु ने "मनुस्मृति" में कहा था कि " यत्र नार्यस्तु पूज्यते, रमन्ते तत्र देवता " अर्थात देवगण ऐसे स्थान पर वास करते है जहां स्त्रियों का सम्मान होता है। शायद इसी भावना के तहत प्राचीन भारतीय समाज में महिलाओं को विशेष स्थान प्राप्त था, उन्हें सम्मान की दृष्टि से देखा जाता था। ई. पू. 3000 से ई. पू. 2000 के पूर्व आर्यन युग में महिलाएं समाज में अपना विशिष्ठ स्थान रखती थी। हड़प्पा और मोहनजोदड़ों के मूक प्रमाण बताते है कि आर्यो से पूर्व के सिंधु समाज में महिलाअएं विशेष स्थान पाती थी। कहा जाता है कि - " कोई भी समाज, कितना सुसभ्य व सुसस्कृत होगा, महिलाओं की स्थिति वहां पर उतनी श्रेष्ठ होगी।" सिंधु सभ्यता समाज बेहद सुसभ्य व सुसस्कृत था इसलिए हम कह सकते है कि तब महिलाएं भी समाज में सम्मानजनक स्थान पर रही होंगी।

पंचायती राज में महिलाओं की भूमिका चुनौतिपूर्ण है:-

जब महिलाओं के लिए पंचायतों में आरक्षण लाया गया, तब एक तिहाई महिलाओं को निर्वाचन प्रक्रियॉ में प्रत्याशी बनाना बहुत दुर्लभ माना जा रहा था, परन्तु धीरे-धीरे महिलाएॅ स्वयं ही जागरूक होती गई और एक दूसरे के संपर्क में आने के बाद से ही राजनीति में भाग लेने के लिए प्रयासरत् होती गई।

महिलाओं की भूमिका पंचायती राज व्यवस्था में नगण्य माना जाता था। इसका मुख्य कारण था शिक्षा का अभाव और पुरूष प्रधान देश। पुरूष की भांति महिलाओं को राजनीतिक अधिकार नही दिए गये थे। महिलाओं को उस स्थिति से निकाल कर राजनीति प्रक्रियॉ में उनकी सहभागिता सुनिश्चित कराना बहुत ही कठिन लग रहा था। लेकिन जैसे-जैसे शिक्षा का प्रचार-प्रसार हुआ, महिलाओं में भी अपने अधिकार एवं कर्तव्यों के प्रति जागरूकता आती गई और पंचायतों के कार्यप्रणाली, निर्वाचन एवं निर्णय निर्माण में अपनी सहभागिता में लगातार वृद्धि को दर्शाती गई। यह एक बहुत ही चुनौतिपूर्ण कार्य था क्योकि छत्तीसगढ़ राज्य बहुत ही पिछड़ा राज्य है जहॉ पर महिलाएॅ आज भी पूर्ण रूप से शिक्षित नही है और

उनमें जनजागरूकता, जनचेतना का प्रभाव डालना उनको, उनके राजनीतिक अधिकार के प्रति उत्तरदायित्व देना बहुत ही चुनौतिपूर्ण माना जा रहा था।

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Acute Effect of Mercuric Chloride Exposure in the Freshwater Fish Gambusia Affinis.

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ABSTRACT-

The toxic effect of Mercury on freshwater fish gambusia affinis was studied. The LC50 values of mercury in gambusia affinis for 24, 48, 72 and 96 hours were 0.73, 0.69, 0.63 and 0.58 ppm respectively. Gambusia affinis fish was silvery white in body in the control group throughout the experiment. The body colour changed from original silvery white to dark colour in heavy metal treated fish. The fish maintained in freshwater behaved normal as usual. But when the fish was exposed to mercury, erratic swimming, abnormal posture, dis-balance, sluggishness, imbalance in posture, increase in surface activity, opercular movement, gradual loss of equilibrium and spreading of excess of mucus all over the surface of the body were observed.

Keywords: gambusia affinis, Acute Toxicity, Mercury, LC50, Behaviour.

INTRODUCTION

Pollution is the result of the environment's negative feedback on living creatures. The aquatic ecosystem is not immune to pollution's negative impacts. Recently, there has been a surge of interest. Rivers and estuaries were chosen because they are major sources of pollutants in coastal oceans. As well as oceans Humans are to blame for marine contamination because they introduced new species. Hazardous waste compounds into the maritime environment, either directly or indirectly Rivers and estuaries have not been spared, resulting in negative consequences that have paved the path for health risks. relating to humans [1] Industrialization, agricultural intensification, and fast population expansion. The growing population has resulted in an increase in the discharge of pollutants that are hazardous to the biotopes mentioned above. There are four major types of contaminants that endanger marine environmental resources: Heavy metals, radionucleotides, petroleum hydrocarbons, insecticides, and radionucleotides . Heavy metals are the most harmful of them because of their biological stability. In a metal-contaminated environment, If the water is to be utilised for drinking, the stream may pose a threat to public health. As well as for other uses, In recent years, there has been a growing concern about the consequences of various technologies. Surface runoff from rain or other sources can deposit heavy metals in freshwater habitats. Rapid Heavy metals, such as mercury, have become more widely used as a result of industrialization and urbanisation. A bigger picture These metals end up in aquatic habitats either directly or indirectly as effluents. Metal traces have a significant attraction to biological creatures in general, and the sluggish adaptation of these organisms Chemicals in biological systems have accumulated in bodily tissues, resulting in cancer. A number of body functions are stimulated, irritated, and inhibited. Currently, there is more food available. The creation of energy to suit the needs of an ever-increasing population is a big issue. This is our country. Man has used contemporary agricultural and industrial practices to address these needs. As well as industrial production However, the population increase poses a significant threat to the environment. Society is a whole. Organisms that live in marine, estuarine, and freshwater settings are diverse. As a result of industrialization and current farming practises, people are exposed to dangerous quantities of heavy metal pollution. Iron, copper, manganese, magnesium, and zinc are some of the most important heavy metals. At ideal quantities [2], however if the concentrations of these as metals accumulate in the environment, they have the potential to disrupt organisms' metabolic processes. Toxic to aquatic species are the non-essential metals mercury, cadmium, silver, and lead. Even at very low quantities, it has the ability to cause cancer. In enterprises, agriculture, and the military, mercury is widely used. It is the most poisonous of the heavy metals, with uses in electronics, medicine, and dentistry. By quick diffusion and tight binding, mercury released into the environment can enter the food chain. Methyl mercury is the most common form of mercury found in proteins. Mercury has the power to cause cancer in any chemical form. Proteins are

denatured, enzymes are inactivated, and severe health problems are caused. The heavy metal contaminations result in epidemic diseases such as "Minamata" [7], "Itai-Itai" [8] etc. Among the non-essential metals, arsenic, mercury, cadmium, lead and silver, poses serious threat [9]. They have many sources to reach the coastal system [10]. The human destructive influence on the aquatic environment is in the form of sub lethal pollution which results in chronic stress conditions that have negative effect on aquatic life. The main source of freshwater pollution can be attributed to the discharge of untreated waste, the dumping of industrial effluent and the run-off from the agricultural fields. Mercury pollution in aquatic ecosystems has received a great deal of attention since the discovery of mercury as the cause of Minimata disease in Japan in the 1950s [11]. The fate of mercury in the environment depends on the chemical form of mercury released and the environmental conditions. The elemental mercury, the inorganic mercury and the methyl-mercury are the three most important forms of mercury in natural aquatic environments. Most mercury is released into the environment as inorganic mercury, which is primarily bound to particulates and organic substances and might not be available for direct uptake by aquatic organisms [12]. Toxicity is influenced by the form of mercury, environmental media, environmental conditions, sensitivity or tolerance of the organism, and its life history stage. The inorganic mercury is less acutely toxic to aquatic organisms than methyl-mercury, but the range in sensitivity among individual species for either compound is large. The undesirable effects of heavy metals and other toxic elements has long been recognized for creating havoc in the aquatic and terrestrial environments. Acute poisoning of aquatic environment leading to ravages of lives occurs from either the occasional industrial and haulage accidents or during routine dumping and unconscious leaching practices. Long term exposure to heavy metals and toxic elements has cataclysmic implications to our environment. It may prove to be hazardous and chronic to the animals living in water or associate with it either directly or in a roundabout way. Indeed, the presence of certain metals like iron, copper, cobalt, calcium and zinc at certain level in their exploitable forms is essential for life as a source of minerals. The mere presence of metals does not constitute a major threat to fisheries and other aquatic animals' health. But certain metals for instance, mercury, cadmium, silver, lead and arsenic have no nutritive value and are critically idiom as environmental contaminants. With this in view an attempt has been made in the present study to investigate the toxicity impact of heavy metal mercury on Gambusia affinis since very little information is available in this important edible freshwater fish.

MATERIALS AND METHODS –

The freshwater healthy fish, Gambusia affinis of the weight (8±1g) and length (7 selected for the experiment and were collected from Ponds in and around Adirampattinam. Fish were screened for any pathogenic infections. Glass aquaria was washed with 1% KMnO4 to avoid fungal contamination and then sun dried. Healthy fishes were then transferred to glass aquaria 2°C; total hardness – 518±20 cm) containing dechlorinated tap water (Temperature – 28 ×20×(35 0.04). Fish were acclimated± 0.13 ppt and pH - 7.8 ± 0.2 mg/l; salinity - 1.2 ± 23 mg/l; DO - 5.6 ± to laboratory conditions for 10 to 15 days prior to experimentation. They were regularly fed with commercial food ad labium and the medium (tap water) was changed daily to remove faeces and food remnants.

Metal for toxicity studies (Mercury) Toxicity studies were conducted to obtain reliable data regarding the effects of the toxicant on the test species. Static bioassay tests were conducted as per standards set by the American Public Health Association [13]. The toxicant sample used possessed the following characteristics.

Acute toxicity test-

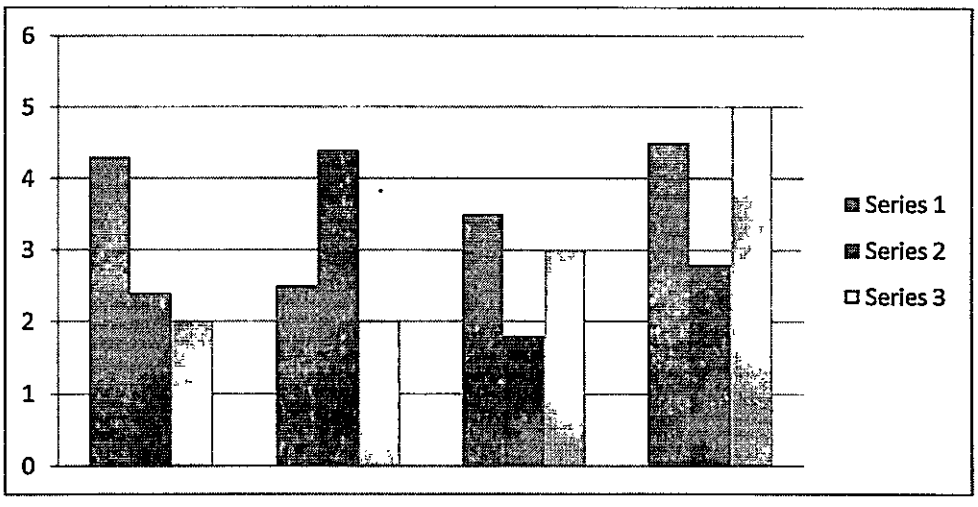
Toxicity tests were conducted in accordance with standard methods [14]. Stock solution of mercury with a concentration of 1 g per litre (equivalent to 1 ppt) was prepared in distilled water and different dilutions were prepared by adding required amount of distilled water. Based on the progressive bisection of intervals on a logarithmic scale, log concentrations were fixed after conducting the range finding test. The fish were starved for 24 hours prior to their use in the experiments as recommended by storage to avoid any interference in the toxicity of the heavy metal mercury by excretory products. After the addition of the toxicant into the test tank with 10 litres of water having twenty fish, mortality was recorded after 24, 48, 72 and 96 hours. Five replicates were maintained simultaneously. Percent mortality was calculated and the values were transferred into probit scale.

Probit analysis was carried out as suggested by Finney [15]. Regression lines of probit against logarithmic transformations of concentrations were made. Confidential limits (upper and lower) of the regression line with chi-square test were calculated by a computerized programme for Finney's [15] probit analysis.

RESULTS AND DISCUSSION- Mercury caused 50% mortality of Gambusia affinis (96 hours) at 0.002 ppm. The LC50 values obtained at 24, 48, 72 and 96 hours exposures and the 95% confidence limits for the heavy metal revealed that mercury showed higher toxicity. The LC50 values of mercury for 24, 48, 72 and 96 hours were 2.0, 1.5, 1.0 and 0.002 ppm respectively (Table 1).

S. No	Concentration Of Dose(Ppm)	Hour death rate
1	2.0	-
2	1.5	-
3	0.05	LC_{50}
4	0.002	Survive Long Time(24 Hour)

GRAPH SHOWING DIFFERENT DOSES-



Gambusia affinis was silvery white in body in the control group throughout the experiment. The body colour changed from original silvery white to dark colour in heavy metal treated fish. The fish maintained in freshwater behaved normal as usual. But when the fish was exposed to mercury, erratic swimming, abnormal posture, dis-balance, sluggishness, imbalance in posture, increase in surface activity, opercular movement, gradual loss of equilibrium and spreading of excess of mucus all over the surface of the body were observed. A survey of LC50 values of different heavy metals to the fish for different periods of exposure reveals the occurrence of a wide differences between duration of exposure and types of fishes [16,17,18,19,20,21,22,23,24,25]. Changes in body colour have been reported in Anabas testudineus after exposure to monocrotophos [23], and Cyprinus carpio to ammonia stress [26]. The behavioural changes are considered directly related to complex physiological responses and have often been used as a sensitive indicator of stress [27]. Tilapia fish exposed to sub lethal concentrations of mercury settled immediately at the bottom of the aquarium. The shoal was disturbed in the first day itself. Fish occupied larger area than to that of control group. They were spread and found swimming independently. Irregular, erratic and darting movements with imbalanced swimming activity and attempt to jump out of the toxic medium were observed. Similar behaviour patterns were observed in fish, trout and L. rohita exposed to fenvelrate [28]. Increased opercular movements, loss of equilibrium, erratic swimming and jerky movement and mucous secretion all over the body were observed in Heteropneustes fossilis after exposure to rogor and endosulphan pesticides [29]. Erratic swimming, imbalance in posture, increased surfacing activity with gradual decrease in opercular movement, loss in equilibrium, excess of mucus all over the body surface followed by sluggishness and death of A. testudineus after exposure to monocrotophos was reported by [23]. Surfacing phenomenon was also seen on

second day. On third day swimming behaviour was in cork-screw pattern rotating along horizontal axis. Fish on fourth day showed signs of tiredness and lost positive rheotaxis characterized by weakness and apathy. Fish frequently came to water surface. Similar trend has observed in Gambusia affinis exposed to endosulfan [30]. Finally fish turned upside down and dead. Fish in sublethal concentrations were found under stress but that was not fatal. The settlement of the fish to the bottom of the tank on addition of endosulfan reveals the avoidance behaviour of fish as observed in trout and tilapia by Murthy [28] and Devi Swetharanyam [30]. Shivakumar et al. [31] also observed the avoidance behaviour in Ctenopharyngodon idellus on exposure to endosulfan. Irregular and erratic swimming indicates loss of equilibrium [30]. This must be due to the damage caused at the centre associated with the maintenance of equilibrium in the brain [32]. Many workers have observed erratic swimming, equilibrium loss and surfacing phenomenon in the fish following pesticide exposure. Surfacing phenomenon shown by the fish might be to gulp maximum possible air to ease the tension. Rao and Rao [32] also observed this phenomenon in the fish, Channa punctatus exposed to two different pesticides viz., carbaryl and phenthoate. In relation to this they also reported that the surfacing phenomenon was due to hypoxic condition of the fish. Increased opercular movements were seen in the fish, Gambusia affinis exposed to mercury, which was in accordance to the report put forth by Amitakiran and Jha [33] in Clarias batrachus exposed to herbicide, herboclin. The rapid opercular movements may be due to accumulation of mucous over gill due to the toxicant [21,34]. Similar findings were observed by Prasanth et al. [35], when freshwater fish C. mrigala exposed to cypermenthrin. The fish Gambusia affinis exhibited irregular, erratic darting movements with imbalanced swimming activity. Occasionally the fish tried to jump out of the toxic medium, which shows the avoidance behaviour of the fish to the toxicant. Similar behavioural patterns were observed in L. rohita exposed to endosulfan [31]. The change of body colour, behavioural changes such as irregular swimming movements, loss of equilibrium, restlessness and excess secretion of mucous suggest that Gambusia affinis has undergone chemical stress when exposed to heavy metals and the present study could be taken as an indicator of heavy metals pollution. The changes in the swimming behaviour and the opercular movements were more obvious in fishes subjected to prolonged exposure period at the acute concentration level while it was not so pronounced at the sub-lethal concentration. The impaired equilibrium observed in the present study concurs with the results obtained in the fresh water fishes. Barbus aurilus and Lepidocephalecthyes quntea exposed to lead, mercury, copper and zinc [36]. It was also noticed that the swimming activity of the mercuric chloride exposed fish significantly decreased. The increased opercular movements are inversely proportional to the decreased swimming activity. Increased opercular movements have been observed in Gambusia affinis exposed to mercuric chloride [37]. Similar observations were made in several fishes viz., Stickle backs [38], Minnows [39] and Salmo gairdneri [40]. Preliminary range finding and screening tests have been made for establishing the water quality and also to serve as a baseline study for 96 hr sub-lethal and median-lethal exposure in toxicological investigations. Limited data are available on the relative toxicity of mercury compounds to aquatic organisms. Jackim et al., [41] and Klavnig et al., [42] reported acute toxicity levels during 96 hr. of exposure. The LC50 values for mercuric chloride toxicity in Fundulus heteroclitus were reported as 230 and 201 µg/l respectively. Portmann [43] obtained a 48 hr. LC50 value as 3.3 ppm of mercury for the fish Pleuronectes flesus. Saxena et al. [44] reported LC50 values at 24 hr with mercuric chloride for Danio malbaricus and Puntius ticto 2 mg/l and 0.30 mg/l respectively. Dhanekar et al, [45] obtained LC50 values at 96 hr mercuric chloride exposure for Puntius sophore, Labistes reticulates, Sarotherodon mossambicus, Channa punctatus and Heteropneustes fossilis as 0.15 mg/l, 0.25 mg/l, 0.50 mg/l, 1.0 mg/l and 1.0 mg/l respectively. Since the publication of the standard bioassay procedures [46,47,48,49], there have been a multitude of tests developed by researchers for evaluating or measuring toxicity using various organisms living in different environments and representing different levels in the food chain [14]. It is well known that toxicity will depend upon (a) the chemical form of the metal (b) the presence of other metals (c) the physiological status of the organisms and (d) the environmental, physico-chemical parameters like temperature, dissolved oxygen and the pH of the water. The toxicity of the metal is also dependent upon the residence time of the metal concerned. Generally most metals have long residence timers and hence, exert their toxic effects over long periods.

CONCLUSION -

The LC50 can be used as a relative measure to study the impact of the heavy metal concentration on test fishes at different intervals. This toxicity test on the effect of mercury on Gambusia affinis offers a rapid method for assessing the heavy metal impact on this fish. This type of preliminary investigations can be useful for deriving the safe level of heavy metal concentration (especially mercury) that can be released into the aquatic environments.

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Baal Aparaadhah: Ek Samaajashaastreey Adhyayan

(बाल अपराधः एक समाजशास्त्रीय अध्ययन)

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प्रस्तावना:

किसी भी राष्ट्र की भावी विकास और निर्माण वर्तमान पीढ़ी के मनुष्यों पर उतना अवलंबित नहीं है जितना कि आने वाले कल की नई पीढ़ी पर अर्थात आज का बालक ही कल के समाज का सृजनहार बनेगा। आज समाज के नैतिक स्तर में अत्यंत तीव्र गति से परिवर्तन हो रहा है। वैश्वीकरण, उदारवाद तथा पश्चिमी उन्मुक्त स्वच्छन्दवाद की वजह से किसी भी कार्य को बुरा नहीं माना जाता है। जैसे मर्जी वैसा करो और तब तक करते चलो जब तक दूसरे को क्षति न पहुंचे।

स्वच्छन्द सेक्स एवं नशीले द्रब्यों का प्रयोग अमेरिका या पश्चिमी देशों के लिए अपराध की श्रेणी में नहीं आता और इस पर विधिवत कानूनी तौर पर वैधता की स्वीकृति भी दी गयी है। भारत जैसे देशों में भी "लिविंग रिलेशनशिप" व समलैंगिकता को भी मान्यता प्राप्त है। यही कारण है कि पश्चिमी देशों में बालकों में बहुत तीब्रता के साथ नैतिक स्तर में गिरावट आ रही है। वैश्विक स्तर देखें तो शहर के विद्यार्थियों से लेकर जंगलों के बीच बसे हुए गांवों के विद्यार्थियों में उदण्डता, अनुशासनहीनता आज बिल्कुल सामान्य हो गई है। छोटे-छोटे बच्चों को बीड़ी पीते, गुटखा खाते, अश्लील हरकतें करते देखना आम बात है। ऐसे में देश की उन्नति व राष्ट्र का निर्माण कैसे होगा। यह गंभीर चिंतन का विषय है।

बाल अपराध कम उम्र के व्यक्ति जो असामाजिक कृत्य करते हैं वे बाल अपराधी हैं। साधारणतया 17 वर्ष से कम या कभी-कभी 21 वर्ष तक के वे लोग जो कानून विरोधी कार्य करते हैं उन्हें बाल अपराधी कहा जाता है। इंडियन पेनल कोड के चिल्ड्रन एक्ट के अनुसार - हर लड़का जो 16 वर्ष का है तथा लड़की 18 वर्ष से कम है यदि कोई अपराधी कार्य करता है तो उन्हें बाल अपराधी कहा जाता है अर्थात बाल अपराध 15 वर्ष से कम आयु के व्यक्तियों द्वारा किया गया वह कार्य जो समाज तथा विधान विरोधी है।

न्यूमेड के अनुसार- एक बाल अपराधी निर्धारित आयु से कम आयु का वह व्यक्ति जो समाज विरोधी कार्य करने का दोषी है जिसका दुराचरण कानून का उल्लंघन है।

इस प्रकार बाल अपराध के मूलभूत तत्व में -(1) यह अपराध 15 वर्ष या इससे कम आयु के व्यक्तियों द्वारा किए जाते हैं, (2) व्यवहार वैधानिक आधार पर दंडनीय होता है, (3) यदि ऐसे लोगों की संख्या समाज में अधिक है तो समाज विघटित होने लगता है।

प्रस्तुत शोध पत्र का उद्देश्य बाल अपराध के कारण एवं निवारण पर चर्चा करना है। भारतीय परिवेश में सामान्य रूप से या तो निम्न परिवार के बच्चे जिनका पालन पोषण उचित रूप में नहीं हो पाता अथवा गलत संगति में पड़ने के कारण अपराध की ओर प्रेरित हो जाते हैं। बड़े परिवार के बच्चों को देखकर वह समस्त चीजें प्राप्त करने का प्रयास करते हैं जो उन्हें अपने पारिवारिक स्तर में संभव नहीं है। जबकि उच्चवर्गीय परिवार के बच्चे अति लाड- प्यार अथवा ज्यादा साधन संपन्न होने के कारण बिगड़ जाते हैं, वे भी गलत संगति के कारण विभिन्न प्रकार के अपराधों में लिप्त हो जाते हैं।

बाल अपराध के कारण:

इलियट और मेरील ने अपनी पुस्तक "सोशल डिसआर्गेनाइजेशन" में बाल अपराध के निम्नलिखित कारणों को महत्वपूर्ण बताया है-

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4. युद्ध संबंधी परिस्थितियां

5. अपराधियों से संसर्ग

बाल अपराध निरोध के उपायः

यद्यपि बाल अपराध के लिए कोई एक कारण जिम्मेदार नहीं है फिर भी कुछ प्रमुख कारक जो बाल अपराध को अधिक बढ़ावा देते हैं यदि कुंठित कर दिये जाए तो बाल अपराध को कम किया जा सकता है। साधारणतया निम्नलिखित सुझाव बाल अपराध के लिए उपयोगी सिद्ध हो सकते हैं-

- **उचित स्कूल तथा शिक्षा की व्यवस्था-** विभिन्न अध्ययनों से यह प्रमाणित हो चुका है कि अधिकांश बाल अपराधी अशिक्षित तथा मूर्ख होते हैं। अतः शिक्षा का प्रसार बाल अपराधी निरोध के लिए आवश्यक है। इसमें कुशल अध्यापन होने चाहिए जो बच्चों को समाज के संदर्भ में उनका दायित्व क्या होघ् इसकी शिक्षा दें। खेलकूद तथा चरित्र निर्माण आदि कार्य स्कूल में ही होना चाहिए। इससे बाल अपराध कम होंगे।
- **उचित लालन-पालन-** यदि बच्चों का लालन-पालन, देखभाल ठीक से की जाए तो एक कुशल नागरिक की भूमिका निभा सकते हैं। बच्चों का देखरेख या लालन पालन अभिभावक का कार्य है और जो अभिभावक ये नहीं कर पाते उसके बच्चे बाल अपराधी पाये जाते हैं। बाल अपराध को रोकने के लिए उचित देखभाल आवश्यक है। न तो बच्चे को आवश्यकता से अधिक स्नेह ही दिया जाना चाहिए, न ही उन्हें क्रूर नियंत्रण में रखना चाहिए, जहां कि वे अपने विचारों को व्यक्त न कर सकें। बच्चों को अनुभव का अवसर दिया जाना चाहिए।

- **नैतिक शिक्षा-** नैतिकता के विकास के लिए नैतिक शिक्षा आवश्यक है। स्कूलों के माध्यम से या अन्य स्वेच्छिक एजेंसियों के माध्यम से इसका प्रबंधन हो सकता है। आज हम उपयोगी शिक्षा के पीछे भागते हैं। यदि नैतिकता का विकास बच्चों में हो जाता है तो वे एक सफल नागरिक की भूमिका निभायेंगे।
- **आगन्तुम अध्यापक-** आगन्तुम अध्यापक का प्रबंध भी बाल अपराध निरोध में सहायक हो सकता है। अमेरिका तथा अन्य यूरोपीय देशों में आगन्तुक अध्यापक की व्यवस्था हो जाती है, ताकि विद्यार्थी विश्व के अन्य भागों में होने वाली घटनाओं से परिचित होकर उसके अनुसार व्यवहार कर सके।
- **मनोवैज्ञानिक अस्पताल-** बाल अपराध निवारण के लिए मनोवैज्ञानिक अस्पताल आवश्यक है। इससे बाल अपराध को कम कर सकते हैं। अधिकांश बच्चों का मानसिक संतुलन की गड़बड़ी के कारण अपराध करते हैं।
- **उचित मनोरंजन का साधन-** बच्चों के खाली समय के लिए उचित मनोरंजन के साधनों की व्यवस्था होनी चाहिए। उन्हें बीड़ी, सिगरेट, शराब, गंदे सिनेमा, अश्लील नाचघर आदि से बचाना चाहिए।
- **समन्वयात्मक परिषदें-** यह अनुभव किया जा रहा है कि समन्वयात्मक परिषदें जिनका निर्माण किशोर न्यायालय, प्रोबेसन अधिकारी, पुलिस विभाग, स्कूल, समाज कल्याण विभाग आदि के प्रतिनिधियों से होता है। के माध्यम से बाल अपराध को रोका जा सकता है।
- **अन्य कारण-** अन्य उपायों में विवाह विच्छेद तथा पृथक्करण को रोकना प्रमुख है। विघटित परिवार को संगठित करना आवश्यक है। परिवार नियोजन कार्यक्रम के माध्यम से एक परिवार में केवल उतने ही बच्चे पैदा किए जाएं जिनका पालन पोषण ठीक से हो सके।

बाल अपराधियों का सुधार:

- **प्रोबेशन-** प्रोबेशन बाल अपराधियों को सुधारने का एक महत्वपूर्ण संस्था है। इसका महत्व आधुनिक समाज में दिन प्रतिदिन बढ़ रहा है। इस संस्था में प्रोबेशन अधिकारी जो कि समाजशास्त्र तथा मनोविज्ञान का ज्ञाता होता है, वह अपने ज्ञान के आधार पर बाल अपराधी बच्चों की समस्या को समाधान करता है। प्रोबेशन अपराधियों के सुधार की एक प्रक्रिया है।
- **सुधार गृह-** बाल अपराधियों के सुधार का यह दूसरा उपाय है, जिसके द्वारा बाल अपराधियों को सुधारा जाता है। राज्य सरकार ही सुधार गृह स्थापित कर सकती है तथा दूसरे स्कूलों को भी स्वीकृति दे सकती है। जो एक्ट के अनुसार कार्य करते हैं। इस स्कूल में बाल अपराधियों की शिक्षा, नैतिक एवं औद्योगिक प्रशिक्षण देने की व्यवस्था होती है।

सुधार गृह स्कूलः

- सुधार गृह स्कूल, हजारीबाग - यह पश्चिम बंगाल, आसाम, बिहार और उड़ीसा राज्यों के लिए सामान्य है।
- लखनऊ सुधार स्कूल
- मध्य प्रदेश, जबलपुर में भी सुधार स्कूल है।
- पोस्टैल संस्था- इस संस्था में 15 से 21 वर्ष के बाल अपराधी रखे जाते हैं। यहां का वातावरण अनुशासन युक्त होता है जो सुधार एवं अपराध निरोध में सहायक होते हैं। यह एक्ट मद्रास, पंजाब, बंगाल, आंध्र प्रदेश, मध्य प्रदेश, मुंबई, उत्तर प्रदेश, ट्रावनकोर तथा मैसूर में लागू किया गया है, यहां औद्योगिक शिक्षा दी जाती है।
- किशोर न्यायालय- किशोर न्यायालय का मुख्य उद्देश्य उन कारणों को खोज निकालना है जिनसे प्रेरित होकर बालक ने अपराधी कार्य किया है तथा बाल अपराधी में सुधार या परिवर्तन लाने के लिए कौन सा उपाय सर्वोत्तम हो सकता है।
- बंदी गृह- जब कोई बच्चा बाल- अपराध अधिनियम के अंदर पकड़ लिया जाता है तो उसको 24 घंटे के अंदर ही किशोर न्यायालय के सामने लाया जाता है।

निष्कर्षः

बाल अपराध सभी समाजों में एक गंभीर समस्या है जिसके तुरंत सुधार की आवश्यकता है। इनके सुधार के लिए हम व्यापक योजनाएं बनाएं तथा उन्हें भली-भांति क्रियान्वित करें ताकि बाल अपराधियों का सुधार हो सके। केन्द्रीय

सरकार और राज्य सरकार ने इसके लिए कई योजनाएं बनाई है उन्हें शीघ्र क्रियान्वित करें। बाल अपराधियों के सुधार के लिए हम सबको अधिक क्रियाशील होना पड़ेगा, क्योंकि आज का बालक ही राष्ट्र का भावी कर्णधार है।

संदर्भ ग्रंथः

1. सामाजिक अपराधिकी - डॉ. एन बी परांजपे
2. भारतीय सामाजिक समस्याएं - जी. आर. मदन
3. विधि एवं न्यायिक विज्ञान - डॉ. राजू टंडन
4. अपराधों का वैज्ञानिक विश्लेषण - डॉ. जे. डी. शर्मा
5. सामाजिक विघटन - डॉ. के. के. मिश्रा

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(स्वतंत्रता आंदोलन में जनजातियों की भूमिका)

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बिलासपुर (छ-ग-

सारांश

स्वतंत्रता सेनानियों ने असमान लड़ाइयों के अनेक उदाहरणों को दर्ज किया है क्योंकि ये उस समय अपरिहार्य हो गए थे जब साम्राज्यवादी ताकतें अत्याचारी ताकत के बल पर विभिन्न इलाकों पर कब्जा करने के लिए बाहर निकल पड़ी थी। इन ताकतों ने स्वतंत्र लोगों की स्वतंत्रता और संप्रभुता को नष्ट करके असंख्य पुरुषों] महिलाओं और बच्चों के जीवन का सर्वनाश करने की प्रक्रिया को आगे बढ़ाया। यह विस्तारवाद के बुरे डिजाइन और आत्म प्रस्तुति की शक्तिशाली भावना के बीच एक युद्ध था। जनजातीय लोगों ने ब्रिटिश प्राधिकारियों और अन्य शोषकों का पुरजोर विरोध किया। अनेक शताब्दियों तक जनजातीय लोगों को वनों में अलग-थलग कर दिया गया और उधर-उधर बिखेर दिया गया लेकिन प्रत्येक जनजाति ने अपनी सामाजिक, सांस्कृतिक विविधता को कायम रखा। उन्होंने अपने-अपने संबंधित क्षेत्रों में ब्रिटिश प्राधिकारियों के खिलाफ आंदोलन चलाए। बाहरी लोगों के खिलाफ उनके आंदोलनों को उपनिवेशवाद का विरोधी कहा जा सकता है। अपनी भूमि पर अतिक्रमण] जमीन की बेदखली, पारंपरिक कानूनी और सामाजिक अधिकार और रीति-रिवाजों का उन्मूलन] भूमि के हस्तांतरण के लिए किराये में बढ़ोतरी] सामंती और अर्द्ध सामंती मालिकाना हक की समाप्ति के खिलाफ उन्होंने बगावत की। कुल मिलाकर यह आंदोलन सामाजिक और धार्मिक परिवर्तन थे लेकिन इन्हें इनके अस्तित्व से संबंधित मुद्दों के विरूद्ध काम करने के लिए कहा गया। जनजातीय प्रतिरोध आंदोलन भारत के स्वतंत्रता आंदोलन का एक अभिन्न अंग था। इस ऐतिहासिक आंदोलन में बिरसामुंडा, रानी गैदिन्लयू] लक्ष्मणनायक और वीर सुरेंद्रसाई जैसे प्रतिष्ठित आदिवासी नेताओं तथा अन्य लोगों ने ऐतिहासिक भूमिका निभाई।

प्रस्तावना

सदियों से समाज की मुख्यधारा से अलग रहने के कारण आदिवासी अन्य वर्गों की तुलना में अत्यंत पिछड़े हुए हैं। छ-ग- राज्य की 31&76% जनसंख्या अनुसूचित जनजातियाँ की हैं। यहाँ 27 जिलों में से उत्तरी एवं दक्षिणी क्षेत्र के 16 जिलों में अनुसूचित जनजातियों की संख्या कुल जनसंख्या का 35 से 80% के मध्य है। राज्य की 44% भूमि वनों से ढकी हुई है। छ.ग. का इतिहास जितना प्राचीन है] उतने ही प्राचीन जनजातीय भी है। छ-ग- की पहचान उसके जंगल और जनजातियों के लिए है पर पिछले कुछ वर्षों में इस्पात, लोहा, संयंत्र और खनन परियोजना ने जनजातियों का जीवन संकट में डाल दिया है। बस्तर, दंतेवाड़ा जिलों में जहाँ नक्सलवाद के कारण जनजातियों का जीवन दूभर हो गया है, तो सरगुजा, कोरबा और जशपुर जिले में खनिज संसाधनों का दोहन और सरकारी उपेक्षा जनजातीय समाज के लिए खतरा बन चुका है। जल, जंगल और जमीन आजादी के बाद से लगातार जल, जंगल और जमीन के कारण उन्हें बार-बार विस्थापित होना पड़ा है और भला अनचाहे विस्थापन से बड़ा दर्द क्या हो सकता है%&

उद्देश्य प्रस्तावित अध्ययन को सुचारू रूप से संपादित करने हेतु निम्न उद्देश्य निर्धारित किए गए हैं:-

1- राज्य की अनुसूचित जनजातियों को ज्ञात करना एवं समाज पर पड़ने वाले सकारात्मक प्रभाव को ज्ञात करना।

2- अनुसूचित जनजातियों की संख्या ज्ञात करना है।

3- अनुसूचित जातियों की विकास में बाधक तत्वों को ज्ञात करना एवं दूर करने हेतु सुझाव देना है।

4- सामाजिक आंदोलन उनके आंतरिक एवं बाह्य विकास में बाधक है। जिसे जड़ से समाप्त करने की कोशिश करना।

5- सामाजिक आंदोलन को रोकने के सरकारी प्रयास किए गए हैं। उसमें संशोधन करके न्यायपूर्ण एवं लाभदायक नियमों को लागू करवाना।

6- राज्य सरकार/केन्द्र सरकार के द्वारा इनके सर्वांगीण विकास के लिए अपील करना।

7- जनजातीय आंदोलनों का व्यक्ति विकास के लाभ ज्ञात करना।

परिकल्पना-

1- सामाजिक आंदोलनों के सकारात्मक] नकारात्मक प्रभावों को ज्ञात करना।

2- सामाजिक आंदोलनों के सामाजिक] आर्थिक] राजनैतिक] धार्मिक] सांस्कृतिक विकास को ज्ञात करना।

शोध-प्रविधि-

प्रस्तुत अध्ययन द्वैतियक समंकों पर आधारित है। अध्ययन में बोधगम्यता एवं वैज्ञानिकता लाने के लिए विभिन्न पुस्तकों का अध्ययन करके सार को लिया गया है।

अध्ययन क्षेत्र-

यह शोधपत्र भारत में सामाजिक आंदोलन जनजातीय संदर्भ से संबंधित है। अध्ययन का आधार स्वतंत्रता पूर्व जनजातीय आंदोलन एवं स्वतंत्रता पश्चात् जनआंदोलन से है। सामाजिक आंदोलनों के अध्येता इस विश्लेषण पर सहमत हैं कि सामाजिक प्रभावों को उत्पन्न करने वाले सामूहिक क्रियाओं से युक्त आंदोलन सामाजिक कहे जाते हैं। जैसा कि एम-एस-ए- राव ने लिखा है, ''प्रत्येक सामाजिक आंदोलन में व्यक्तिगत क्रिया की अपेक्षा सामूहिक क्रियाएँ महत्वपूर्ण हैं। यह प्रमाणिक तथ्य है किन्तु महात्मा गांधी की व्यक्तिगत सत्याग्रह की अवधारणा इसे प्रश्न चिन्हित करती है। सामाजिक आंदोलनों के संदर्भ में विचार धारा] मूल्य] प्रतिमान एवं संख्या के विवादों में उलझे बिना हम यह कह सकते हैं कि सामाजिक आंदोलन पूर्ण या आंशिक परिवर्तन हेतु समाज के किसी वर्ग द्वारा किया गया वह संगठित प्रयास है जो किसी विचार पर आधारित होकर संचालित होता है। भारत की जनजातियों में अनेक प्रकार के आंदोलन हुए हैं। इनमें से कुछ धार्मिक आंदोलन हैं और कुछ राजनीतिक परन्तु प्रत्येक जनजातीय आंदोलन ने तत्कालीन समाज के अनेक पक्षों को प्रभावित किया है। छत्तीसगढ़ में गुरू घासीदास द्वारा चलाया गया धार्मिक आंदोलन] दीर्घकालिक सामाजिक प्रभाव को व्यक्त करता है। बिहार जिसमें जनजातियों की सघनता से इन्कार नहीं किया जा सकता वहाँ भी कुछ जनजातियों में सशक्त सामाजिक, राजनीतिक आंदोलन हुए हैं। इस प्रपत्र में हम बिहार की तीन प्रमुख जनजातियों के आंदोलनों का उल्लेख कर रहे हैं। मुण्डा जनजाति बिहार की एक प्रमुख जनजाति है जिसकी आज जनसंख्या लगभग 28 लाख से अधिक है। इस जनजाति के अधिकांश सदस्य बिहार के औद्योगिक नगर (जिला) रांची के आसपास निवास करते हैं। भारत की अन्य जनजातियों की तुलना में मुण्डा जनजाति के सदस्य राजनीतिक रूप से अधिक जागरूक रहे हैं। इस तथ्य को उन्नीसवीं सदी के मुण्डा विद्रोह के आधार पर समझा जा सकता है। मुण्डा जनजाति में सामुदायिक एवं स्थानांतरित कृषि का प्रचलन था। सन् 1793 में ईस्ट इंडिया कम्पनी द्वारा जमींदारी प्रथा का उदय किया गया। इस प्रथा के परिणामस्वरूप मुण्डा जनजाति के अनेक ग्राम जमींदारों के अधिकार क्षेत्र में आए। स्थानांतरित एवं सामूहिक कृषि पर रोक लगाने के लिए जमींदारों के सशस्त्र अधिकारियों और मुण्डा जनजाति के सदस्यों में द्वंद्व की उत्पत्ति हुई। परिणामस्वरूप मुण्डा, डीकू (बाहरी लोग) से घृणा करने लगे।

इन परिस्थितियों में मुण्डा और जमींदार के मध्य संघर्ष विकसित होने लगा। छिटपुट संघर्षों को संगठित करने का कार्य सन् 1885 में बिरसा मुण्डा नामक युवा ने लिया। बिरसा मुण्डा के संदर्भ में यह प्रचलित हो गया कि उसमें अलौकिक शक्तियों का

वास है। अलौकिक शक्तियों के प्रभाव के प्रति जनता की विश्वसनीयता से मुण्डा जनजाति के सदस्यों का झुकाव बिरसा की ओर होने लगा। सन् 1895 तक बिरसा के प्रभाव क्षेत्र में मुण्डा जनजाति के अनेक गांव शामिल हो गए। इसी वर्ष बिरसा के नेतृत्व में आठ हजार से अधिक आदिवासियों ने अपने शोषण के विरूद्ध मुण्डा विद्रोह कर दिया। जमींदारी प्रथा द्वारा उत्पन्न शोषण के विरूद्ध मुण्डा विद्रोह पाँच वर्षों तक निरंतर चलता रहा। यह विद्रोह तभी शांत हुआ जब बिरसा की मृत्यु हो गई। बिहार की ही एक दूसरी प्रमुख जनजाति उर्राव है] जिसकी जनसंख्या आज लगभग 16 लाख है। बिहार की सभी जनजातियों में केवल यही एक जनजाति है जिसकी भाषा द्रविड़ भाषा परिवार से संबंधित है] जबकि इनके शारीरिक लक्षणों को द्रविड़ियन प्रजाति के अंतर्गत नहीं रखा जा सकता है। उर्राव जनजाति से संबंधित अनेक लोक कथाओं से प्रतीत होता है कि यह जनजाति पश्चिमी भारत से आकर बिहार में बसी है। इतिहासकार इसका काल पहलीं शताब्दी मानते हैं। यह जनजाति कृषक जनजाति है तथा मुख्यतः बिहार के रांची] पलामू और सिंहभूम जिलों के पठारों पर निवास करती है। उर्राव जनजाति का राजनीतिक संगठन अत्यंत सुदृढ़ है। जिसमें मुखिया प्रथा वंशानुगत है। प्रत्येक ग्राम के परंपरागत मुखिया की भांति अन्तर्ग्रामीण मुखिया प्रथा भी है] जिसकी पंचायत को परहा कहा जाता है। इस प्रकार इस जनजाति का राजनीतिक संगठन राज्यहीन राजनीतिक संगठन के अंतर्गत रखा जा सकता है। मुण्डा जनजाति के विद्रोह के बाद 1914 में उराव जनजाति में भी आंदोलन के बीजों का प्रस्फुटन हुआ। इस काल में जात्रा नामक उराव जनजाति के सदस्य ने जादू और बहुदेवतावाद का विरोध करते हुए एक ईश्वर की उपासना पर बल दिया। जात्रा ने धर्मेश नामक ईश्वर की उपासना का मार्ग बतलाया। परिणामस्वरूप जात्रा के अनुयायियों की संख्या बढ़ती चली गई। इस धार्मिक आंदोलन को ताना भगत आंदोलन के नाम से जाना जाता है। धार्मिक संगठन के स्वरूप और संचार घनत्व के बढ़ने के साथ ही इस जनजाति में राजनीतिक आंदोलन का प्रस्फुरण हुआ। यह राजनीतिक आंदोलन प्रारंभ में ईसाई मिशनरियों के विरूद्ध उत्पन्न हुआ और बाद में इसका स्वरूप पूर्णतः राजनीतिक होता गया। 1921 से लेकर 1947 तक ताना भगत आंदोलन अंग्रेजों] जमींदारों और ईसाई मिशनरियों के विरोध में सत्ता संघर्षरत रहा। स्वतंत्रता के पश्चात भी इसके अनुयायियों ने ईसाई मिशनरियों का विरोध किया तथा भूमि के प्रश्न को लेकर बाह्य व्यक्तियों से भी संघर्ष चलता रहा। संथाल जनजाति बिहार की एक प्रमुख जनजाति है] जनसंख्या की दृष्टि से यह जनजाति केवल बिहार नहीं अपितु सम्पूर्ण भारत की प्रमुख जनजाति के रूप में स्वीकार की जाती है। सन् 1981 की जनगणना के अनुसार केवल बिहार में संथाल जनजाति की जनसंख्या 22 लाख से ऊपर थी। संथाल जनजाति की भाषा को पीटर स्मिट ने एशियाटिक भाषा समूह से संबंधित से संबंधित माना है। संथाल जनजाति की अथव्यवस्था प्रमुख रूप से कृषि पर निर्भर है। संथाल जनजाति की जनसंख्या का एक बड़ा भाग संथाल परगना की बांझी पहाड़ी की तलहटी में निवास करता है। संथाल जनजाति की राजनीतिक प्रशासनिक संरचना अन्य जनजातियों से अलग है। इनके यहाँ (मुखिया परंपरागत नहीं होता अपितु उसका चुनाव वयस्क सदस्यों द्वारा किया जाता है। चयन प्रक्रिया की ही भांति सामाजिक नियंत्रण की प्रक्रिया में संथाल अन्य जनजातियों से अलग है। इनके समुदाय में बिटलाहा नामक आयोजन परम्परागत समाजों की शमनकारी दण्ड व्यवस्था का प्रतिनिधित्व करता है। परम्परागत प्रजातांत्रिक संरचना और सामाजिक नियंत्रण की सुदृढ़ व्यवस्था की पृष्ठभूमि में ही संथाल जनजाति 1855 में ऐसा विद्रोह खड़ा कर सकी जिसे भारत के स्वतंत्रता आंदोलन में सम्मान की दृष्टि से देखा जाता है। अठारहवीं सदी के अंतिम चरण में संथाल जनजाति के सदस्य बिहार के विभिन्न क्षेत्रों में स्थायी रूप से निवास करने लगे थे। अटूट श्रम से इन्होंने पहाड़ और तराई की भूमि को कृषि योग्य बना लिया था। सन् 1793 में ईस्ट इंडिया कम्पनी द्वारा बनाए गये कानून के परिणामस्वरूप संथाल परगना में जमींदारी प्रथा का प्रारंभ हुआ। जमींदारी पथा के प्रादुर्भाव के कारण जहाँ एक ओर लगान में वृद्धि हुई वहीं दूसरी ओर जमींदारों और पुलिस द्वारा इनका अमानवीय शोषण भी आरंभ हुआ। शोषण एवं अन्याय के परिणामस्वरूप संथाल जनजाति के सदस्यों में विद्रोह के बीज का प्रस्फुरण हुआ। 1855 में सिद्धू तथा कान्हू के नेतृत्व में हिंसक आंदोलन का जन्म हुआ। सुदृढ़ सामाजिक व्यवस्था में प्रजातांत्रिक संरचना के कारण इस आंदोलन को फैलने में देर नहीं लगी। लगभग 8000 से अधिक संख्या में संथालों ने हिंसक आंदोलन में भाग लिया। संथाल परगना की भौगोलिक संरचना और जनजातीय कबीलों की सक्रिय सहभागिता के कारण इस विद्रोह को लम्बे समय तक दबाया नहीं जा सका। इस विद्रोह के कारण संथालों की जागरूकता निरंतर बढ़ती चली गई। बिहार की प्रमुख जनजातियाँ मुण्डा] उर्राव जनजाति के आंदोलनों से संथाल जनजाति का आंदोलन अनेक अर्थों में अलग परिलक्षित होता है-

- यह आंदोलन धार्मिक आधार पर अलौकिक शक्ति पर आधारित नहीं था।

- यह आंदोलन शोषण और अन्याय के विरूद्ध एक सशक्त चुनौती बना।

- आंदोलन से उत्पन्न जागरूकता का नैरंत्य आज भी संथाल जनजाति में दिखाई देता है।

शोध पत्र में वर्णित उक्त तीनों जनजातियों के आंदोलन जनजातीय आन्दोलन में धार्मिक] सामाजिक] आर्थिक एवं सांस्कृतिक कारकों की अहम् भूमिका को प्रतिष्ठापित करते हैं। संथाल विद्रोह के विश्लेषण से यह स्पष्ट होता है कि सामाजिक व्यवस्था में कसाव समूह की संगठनात्मक शक्ति को निर्धारित करता है। ऐतिहासिक दृष्टि से इन आंदोलनों का विवेचन और वर्तमान जनजातीय आंदोलन में एक बुनियादी अंतर दिखाई देता है। यह अंतर स्वस्फूर्तता का है। उक्त तीनों आंदोलन स्वतः जनजातीय चेतना से स्फूर्त आंदोलन थे जबकि आज बाह्य चिंतन प्रक्रिया जनजातियों को आंदोलन के लिए प्रेरित कर रही है। इतिहास से शिक्षा लेने की अनिवार्यता आज हमें यह दिशाबोध भी कराती है कि बदलती हुई परिस्थितियों में जनजातियों के पिछड़ जाने का परिणाम एक आंदोलन के रूप में हमारे समाज के समक्ष चुनौती बन सकता है। आदिवासी चिर स्थायी वंचना के प्रतीक बन चुके हैं। इनके समक्ष जो चुनौतियाँ हैं वे सामाजिक चुनौती बनकर भारतीयता के समक्ष भी खड़ी हैं। हम यहाँ पर उन चुनौतियों का विवेचन प्रस्तुत कर रहे हैं। छोटी और अलग-अलग जनजातियों में राजनीतिक आंदोलन को शुरू करने की कम क्षमता होती है। उत्तर-पूर्वी राज्यों की विभिन्न प्रजातियों के बारे में राव 1976 लिखते हैं कि खासी पहाड़ियों की जनजातियाँ गारो पहाड़ियों की अपेक्षा अधिक राजनीतिक रूप में सक्रिय है। जो समरूप और बड़े भूस्वामी जनजातीय समुदाय हैं] जिनका आर्थिक आधार अपेक्षाकृत काफी मजबूत होता है] जैसे मुण्डा] संथाल] भील] गोंड़ जैसी जनजातियों में दिखने को मिलता है। दूसरी ओर राजनीतिक आंदोलनों के दौरान, कई जनजातियाँ सुस्पष्ट नृजातिक पहचान और कभी-कभी एक सर्व जनजातीय पहचान विकसित कर लेती है। नागालैण्ड और मिजोरम की विभिन्न जनजातियों ने भी गैर जनजातीय श्रमिक जनों के साथ शोषकों के विरूद्ध लड़ने के लिए एकजुट होना शुरू कर दिया है। ये लोग मुख्यतः आर्थिक और राजनीतिक मांग उठाते हैं। झारखण्ड मुक्ति मोर्चा जैसे आंदोलन अभी पुनरूद्धारवादी और धार्मिक संघर्षों से संबंधित हैं। रघुवइया 1971 ने 1778 से 1971 के बीच हुए सत्तर जनजातीय विद्रोहों की एक सूची बनाई है। उन्होंने इन विद्रोहों का कालक्रम भी दिया है। सन् 1945 में मैन इन इंडिया नामक पत्रिका में एक विद्रोही अंक का प्रकाशन किया गया था जिसमें विभिन्न जनजातीय विद्रोहों पर चार लेख प्रकाशित किए थे।

जनजातीय आंदोलन के तीन जिल्दों में प्रकाशित ग्रंथ 1982 1983 और 1998 का महत्वपूर्ण योगदान है। प्रथम दो जिल्दों में उन जनजातीय आंदोलनों का वर्णन किया गया है जो मुख्यतः स्वातंत्र्योत्तर काल में हुए हैं। द्वितीय जिल्द का अधिकांश भाग मध्य भारत और आंध्र के आंदोलनों तक सीमित है। इसमें द- भारत के तमिलनाडु और केरल के आंदोलनों पर केवल एक लेख है।

सुझाव

राजनैतिक सशक्तिकरण-

आज आदिवासी जन जिस बड़े संकट से जूझ रहे हैं] वह है पुश्तैनी जमीन से विस्थापना जो वैश्वीकरण के इस दौर में बहुत तेजी से हो रहा है। बांध परियोजना, रेल्वे लाइन, खनन व्यवसाय, औद्योगीकरण, अभ्यारण एवं अन्य कारणों से आदिवासियों का अनिवार्य विस्थापन होता है तो एक तरह से उन्हें अपनी पारंपरिक जमीन व परिवेश से खदेड़ने को विवश कर दिया जाता है। इसकी वजह से उनकी जीविका के आधार भी समाप्त होते हैं। उन्हें सर्वांगीण रूप से सशक्त करने की आज आवश्यकता है।

निष्कर्ष-

जनजातीय आंदोलनों से संबंधित विभिन्न अध्ययन इस तथ्य को उजागर करते हैं कि वे स्वतंत्रता के पूर्व और स्वतंत्रता के बाद के विभिन्न संघर्षों में आदिवासी लोग उग्र रहे हैं। ये अध्ययन यह भी प्रदर्शित करते हैं कि पहले और अभी के आंदोलनों में जनजातियों द्वारा उठाये गए मुद्दों की बदलती हुई प्रकृति के बीच बड़ी पतली रेखा है। और वह धीरे-धीरे धूमिल पड़ती जा रही है। उन्नीसवीं सदी के अध्ययन अधिकांशतः उनकी भूमि और जंगल के अधिकारों पर केन्द्रित थे। फिर भी] पिछले तीन दशकों में पहचान और नृजातीयता के मुद्दों पर अधिकाधिक रूप में जोर दिया जा रहा है। स्वतंत्रता प्राप्ति के पश्चात विभिन्न पंचवर्षीय योजनाओं के माध्यम से किए गए प्रयत्नों ने इन्हें समाज की मुख्य धारा में जोड़ने में महती भूमिका निभायी है। जनजातीय क्षेत्रों में बेहतर आधारभूत सुविधाओं के विस्तार से उनमें शिक्षा का स्तर बढ़ने एवं यातायात व संचार के साधनों के विस्तार ने उन्हें क्षेत्र विशेष से बाहर निकालकर सभ्य समाज से जोड़ दिया है। परिणामतः उनकी सामाजिक, आर्थिक एवं राजनैतिक स्थिति भी बदली है और वे अब सशक्तीकरण की ओर बढ़ रहे हैं। स्वतंत्रता प्राप्ति के पश्चात पिछले 64 वर्षों में देश

में विभिन्न पंचवर्षीय योजनाओं के माध्यम से विकास हेतु किए गए प्रयत्नों में जनजातीय क्षेत्रों का विकास और जनजातियों का राजनैतिक सशक्तिकरण भी एक प्रमुख बिंदु है। स्वधार्मिकता, स्वसंस्कृति, आत्मपरंपराओं तथा स्वसामाजिक मूल्यों के यशोगान का पुनर्वाचन 20वीं और 21वीं सदी के संधिकाल की नई फसल है। इस संक्रामक फसल में कुछ संक्रमणशील बीमारियाँ भी हैं। इनसे बचाव कैसे हो? कम से कम कोई पुराना मॉडल इस नई समस्या से नहीं जूझ सकता। भारतीय समाज आदिवासियों को मुख्य धारा में सम्मिलित कर समग्र सामाजिक सम्पन्नता को प्राप्त कर सके और जनजातीय समाज के समग्र विकास की दिशा में प्रयास हो।

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अटल बिहारी बाजपेयी विश्वविद्यालय, बिलासपुर (छ.ग.) द्वारा संबद्ध

डी.पी. विप्र महाविद्यालय, बिलासपुर (छ.ग.)

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राष्ट्रीय शोध संगोष्ठी

'भारतीय समाज में महिला उत्पीड़न : एक समाजशास्त्रीय अध्ययन'

16 जनवरी 2024, मंगलवार

॥ प्रमाण-पत्र ॥

प्रमाणित किया जाता है कि डॉ./प्रो./श्री/श्रीमती/सुश्री ..... अंजू कमलेश .....

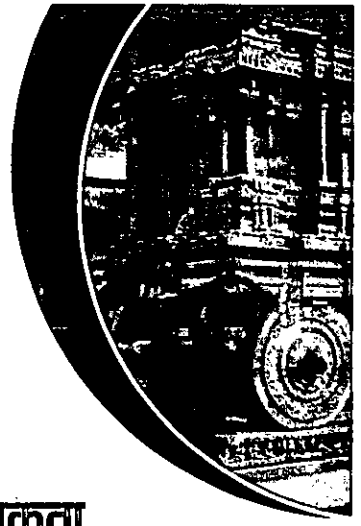
पदनाम ..... सहा० प्राध्यापक ..... संस्था ..... डी.पी. विप्र महाविद्यालय, बिलासपुर ..... ने

समाजशास्त्र विभाग, आंतरिक गुणवत्ता प्रकोष्ठ, डी.पी. विप्र महाविद्यालय बिलासपुर (छ.ग.) एवं हरिहर ऑक्सिजोन महिला विंग बिलासपुर

के संयुक्त तत्वावधान में आयोजित राष्ट्रीय संगोष्ठी में परिस्थितियां एवं महिला उत्पीड़न, नारी से नारायणी एक सफर

विषय पर सक्रिय सहभागिता की / शोधपत्र प्रस्तुत किया / व्याख्यान दिया / सत्र की अध्यक्षता की ।

अनुराग शुक्ला	डॉ. (श्रीमती) अंजू शुक्ला	भुवन वर्मा
अध्यक्ष, प्रशासन समिति	**प्राचार्य**	**संयोजक**
डी.पी. विप्र महाविद्यालय, बिलासपुर (छ.ग.)	**डी.पी. विप्र महाविद्यालय, बिलासपुर (छ.ग.)**	**हरिहर ऑक्सिजोन महिला विंग, बिलासपुर (छ.ग.)**



डॉ. सी.व्ही. रमन विश्वविद्यालय

करगी रोड कोटा, बिलासपुर (छ.ग.)

नैक द्वारा ग्रेड A प्रदत्त

राष्ट्रीय सम्मेलन (National Conference)

विकसित भारत @ 2047: अनुसंधान, भारतीय भाषा एवं भारतीय ज्ञान परंपरा की प्रासंगिकता

Viksit Bharat@2047: Relevancy of Research, Indian Language and Bhartiya Gyan Parampara

आयोजकः भाषा विज्ञान विभाग, छत्तीसगढ़ी शोध एवं सृजनपीठ, वनमाली शोध एवं सृजनपीठ, भारतीय ज्ञान परम्परा केन्द्र एवं आई. क्यू. ए. सी.

दिनांक: 14-15 फरवरी 2024 (हाईब्रिड मोड)

क्रमांक सं. / Sl. No. 61

प्रमाण-पत्र

प्रमाणित किया जाता है कि _____ ने भाषा विज्ञान विभाग, डॉ.सी.व्ही. रमन विश्वविद्यालय करगी रोड कोटा, बिलासपुर (छ.ग.) द्वारा दिनांक 14-15 फरवरी 2024 तक **विकसित भारत @ 2047 : अनुसंधान, भारतीय भाषा, एवं भारतीय ज्ञान परंपरा की प्रासंगिकता** विषय पर आयोजित राष्ट्रीय सम्मेलन में भाग लिया /विषय _____ पर शोध-पत्र/आलेख / व्याख्यान प्रस्तुत किया।

This is to certify that KANCHI BAJPAI *Delivered a Lecture/Keynote Speaker/Participated/Presented a paper entitled* "THE REBIRTH OF MYTH: REINTERPRETING INDIAN MYTHOLOGY IN CONTEMPORARY LITERATURE" *in the Two Days National Conference on* ***Viksit Bharat@2047:Relevancy of Research, Indian Language and Bhartiya Gyan Parampara*** *organized by Department of Linguistics, Dr. C. V. Raman University, Kargi Road, Kota, Bilaspur, (C.G.) from 14-15 February 2024.*

Dr. Gurpreet Kour	*Prof. V.P. Mishra*	*Gaurav Shukla*
संयोजक	संकाय अध्यक्ष	कुल सचिव

अटल बिहारी बाजपेयी विश्वविद्यालय, बिलासपुर (छ.ग.) द्वारा संबद्ध

डी.पी. विप्र महाविद्यालय, बिलासपुर (छ.ग.)

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16 जनवरी 2024, मंगलवार

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प्रमाणित किया जाता है कि डॉ./प्रो./श्री/श्रीमती/सुश्री अंजली जायसवाल

पदनाम सहायक प्राध्यापक संस्था डी. पी. विप्र. महाविद्यालय बिलासपुर (छ.ग) ने

समाजशास्त्र विभाग, आंतरिक गुणवत्ता प्रकोष्ठ, डी.पी. विप्र महाविद्यालय बिलासपुर (छ.ग.) एवं हरिहर ऑक्सिजोन महिला विंग बिलासपुर

के संयुक्त तत्वावधान में आयोजित राष्ट्रीय संगोष्ठी में प्राचीन समाज में महिलाओं की स्थिति

विषय पर सक्रिय सहभागिता की / शोधपत्र प्रस्तुत किया / व्याख्यान दिया / सत्र की अध्यक्षता की ।

अनुराग शुक्ला	डॉ. (श्रीमती) अंजू शुक्ला	भुवन वर्मा
अध्यक्ष, प्रशासन समिति	प्राचार्य	संयोजक
डी.पी. विप्र महाविद्यालय, बिलासपुर (छ.ग.)	डी.पी. विप्र महाविद्यालय, बिलासपुर (छ.ग.)	हरिहर ऑक्सिजोन महिला विंग, बिलासपुर (छ.ग.)

D.P. VIPRA COLLEGE
BILASPUR
ACCREDITED "A" GRADE BY NAAC

Appendix IV

D.P. Vipra College

Old High Court Road, Bilaspur

Chhattisgarh, India 495001

D.P.VIPRA COLLEGE

OLD HIGH COURT ROAD,BILASPUR(C.G.)

ARTS FACULTY

AUDIT REPORT FOR THE YEAR 2023-24

ARORA TAWARI & ASSOCIATES
CHARTERED ACCOUNTANTS

O-15 &16 RATAN PLAZA,
VYAPAR VIHAR,BILASPUR (C.G.)
PHONE NO.406502

To,
The Chairman (Governing Body),
Dwarika Prasad Vipra College, (Arts Faculty)
Old High Court Road,
BILASPUR (C.G.)

Sub:Audit of Accounts of Dwarika Prasad Vipra College,Bilaspur for the year ended 31st March,2024

Dear sir,

We have examined the Balance Sheet of Dwarika Prasad Vipra College, Bilaspur (C.G.)as on 31st March,2024 alongwith Receipts & Payments Account and Income & Expenditure A/c for the year ended on that date which are in agreement with the books of account maintained at the College. We report that:-

1.BOOKS OF ACCOUNT: The institution has maintained the following books of account for the year under audit:-

a) Cash Book
b) Ledger
c) Journal
d) Bank Books
e) Salary Register for Regular & Adhoc Staff
f) Daily Collection Register for Fees
g) Advance register
h) P.F.Loan Register
i) Receipt Books for Fee, and
j) Voucher Files for Expenses etc.

2.CONVEYANCE EXPENSES AND GENERAL & OFFICE EXPENSES:Some Conveyance expenses /allowances and General office expenses are not supported by proper Bills/ vouchers etc.

3.PHYSICAL VERIFICATION: No evidence of physical verification of fixed assts having been conducted during the year by management was available at the time of our audit.

4. The management has decided from the finacial year 2017-18 to separatley keep and maintain accounts for Arts faculty and also get them audited. However, assets created and liabilities incurred in Arts faculty from financial year 2017-18 only are shown in Arts faculty , and assets/ liabilities of earlier years are continued to be shown in other faculties' accounts.

Contd..2..

ARORA TAWARI & ASSOCIATES
CHARTERED ACCOUNTANTS

O-15 &16 RATAN PLAZA,
VYAPAR VIHAR,BILASPUR (C.G.)
PHONE NO.406502

We have obtained all the information and explanations,which to the best of our knowledge and belief were necessary for the purpose of our audit.

In our opinion, proper books of account have been kept by the college so far as appears from our examination of the books.

Subject to our comments mentioned in Paras (4) above and according to the explanations given to us, the said Balance Sheet,Income & Expenditure A/c and Receipts & Payments A/c read with the accounting policies & notes on accounts,give a true & fair view:-

i) in the case of the Balance Sheet,of the state of affairs of the college as at 31st March,2024 and

ii) in the case of Income & Expenditure A/c, of the Deficit (excess of Expenditure over Income) of the college for the year ended on that date.

For M/s ARORA TAWARI & ASSOCIATES
Chartered Accountants

(K.L.ARORA)
Partner
M.No.072889
Firm Reg. No.006730C
UDIN: 24072889BKGUKA6408

BILASPUR (C.G.)
Date:12-12-2024

DWARIKA PRASAD VIPRA COLLEGE: HIGH COURT ROAD : BILASPUR(C.G.)
RECEIPTS & PAYMENTS ACCOUNT FOR THE YEAR ENDING 31ST MARCH, 2024

RECEIPTS	AMOUNT	ARTS FACULTY	PAYMENTS	ARTS FACULTY
OPENING BALANCES:			SALARIES AND ALLOWANCES:Regular Staff:	
Cash in hand		4242.84	Grant Employees	18382521.00
Cash at Bank			Self Finance	7072793.00
(Schedule 'A')		1599988.80		
Fixed Deposits			Regular Staff (Self Finance:)	
(Schedule 'O')		6002349.00		
			Contractual Salary	1731895.00
INCOME FROM REVENUE FEE:				
(Schedule 'B')		4393911.00	**CONTINGENCY EXPENSES:** (Schedule 'J')	1120883.96
INCOME FROM OTHER SOURCES:				
Interest Received		140044.00	**FIXED ASSETS:(Schedule 'K') (Net)**	429534.00
CAPITAL FUND RECEIPTS:			**PROVIDENT FUND LIABILITY A/C:**	
(Schedule'C')		757417.00	(Schedule'F')	416000.00
TRUST FUND RECEIPTS:			**CLOSING BALANCES:**	
(Schedule'D')		9735703.00	Cash in hand	4040.84
			Cash at Bank (Schedule 'A')	3898171.84
LOANS & ADVANCES:(Schedule 'I')			Fixed Deposits (Schedule 'O')	9319871.00
Credits	5497008.00			
Less: Debits	156110.00	5340898.00	**PROVIDENT FUND A/C:/ ASSETS** (Schedule 'F')	893959.00
CURRENT LIABILITIES & PROVISIONS:				
Credits	5493428.00		**UNIVERSITY FUND RECEIPTS:**	
Less: Debits(Schedule'H'	4455744.00	1037684.00	(Schedule'E')	8250.00
GRANT IN AID: Grant Received (Salary)		19265682.00	Grant Received from UGC/UTILISED (Schedule 'L')	5000000.00
Total Rs.		48277919.64	Total Rs.	48277919.64

Note: Schedule 'A' to 'P' form part of accounts.

Certified that the above statement is true and correct.

As per our report of even date attached.
FOR M/S ARORA TAWARI & ASSOCIATES
Chartered Accountants

BILASPUR (C.G.)
Date:12-12-2024

CORRESPONDENT

BILASPUR (C.G.)
Date:12-12-2024

(K.L.ARORA)
Partner
M.No.72889
F.Reg No. 006730C
UDIN: 24072889BKGUKA6408

PRINCIPAL
D.P. VIPRA COLLEGE
BILASPUR (C.G.)

DWARIKA PRASAD VIPRA COLLEGE: HIGH COURT ROAD : BILASPUR(C.G.)
INCOME AND EXPENDITURE ACCOUNT FOR YEAR ENDING 31ST MARCH, 2024

EXPENDITURE	AMOUNT	INCOME	AMOUNT
SALARIES AND ALLOWANCES:Regular Staff:		INCOME FROM REVENUE FEE:	
Grant Employees	18382521.00	(Schedule 'B')	4393911.00
Self Finance	7072793.00		
		INCOME FROM OTHER SOURCES:	
Contractual Salary	1731895.00	Interest from Bank	140044.00
CONTINGENCY EXPENSES:		Grant in Aid: Grant Received (Salary)	19265682.00
(Schedule 'J')	1120883.96		
		Deficit: Being excess of Expenditure over	
DEPRECIATION:		Income transferred to General fund A/	4935048.96
(Schedule 'K')	426593.00		
Total Rs.	28734685.96	Total Rs.	28734685.96

Note: Schedule 'A' to 'P' form part of accounts.

Certified that the above statement is true and correct.

As per our report of even date attached.

FOR M/S ARORA TAWARI & ASSOCIATES
Chartered Accountants

(K.L.ARORA)
Partner
M.No.72889
Firm Reg. No. 006730C
UDIN : 24072889BKGUKA6408

BILASPUR (C.G.)
Date:12-12-2024

CORRESPONDENT

PRINCIPAL
D P VIPRA COLLEGE
BILASPUR (C.G.)

DWARIKA PRASAD VIPRA COLLEGE: HIGH COURT ROAD : BILASPUR(C.G.)
BALANCE SHEET AS ON 31ST MARCH,2024

FUND & LIABLITIES	ARTS FACULTY	PROPERTY & ASSETS	ARTS FACULTY
FUNDS A/C: (Schedule 'N')	62130231.32	FIXED ASSETS: (Schedule 'K')	2141831.00
GRANTS A/C: (Schedule 'L')	1368077.62	FIXED DEPOSIT: (Schedule 'O')	9319871.00
PROVIDENT FUND LIABILITY A/C: (Schedule 'F')	(2379621.70)	PROVIDENT FUND ASSETS A/C: (Schedule 'F')	6827871.30
CURRENT LIABILITIES & PROVISIONS: (Schedule 'H')	8454594.00	LOANS & ADVANCES: (Schedule 'I')	5000.00
		CURRENT ASSETS A/C: (Schedule 'G')	117519.00
		CASH & BANK BALANCES: Cash in hand	4040.84
		Cash at Bank (Schedule'A')	3898171.84
		GENERAL FUND A/C: (Schedule 'M')	47258976.26
Total Rs.	69573281.24	Total Rs.	69573281.24

Note: Schedule 'A' to 'P' form part of accounts.

Certified that the above statement is true and correct.

BILASPUR (C.G.)
Date:12-12-2024

CORRESPONDENT

PRINCIPAL
D.P VIPRA COLLEGE
BILASPUR (C.G.)

As per our report of even date attached.

FOR M/S ARORA TAWARI & ASSOCIATES
Chartered Accountants

(K.L.ARORA)
Partner
M.No.72889
Firm Reg. No. 006730C
UDIN : 24072889BKGUKA6408

DWARIKA PRASAD VIPRA COLLEGE, HIGH COURT ROAD, BILASPUR (C.G.)

SCHEDULE 'A' : BANK BALANCES

SL. NO.	PARTICULARS	BALANCE AS ON 01.04.2023	BALANCE AS ON 31.03.2024
ARTS FACULTY			
1	Canara Bank A/c No. 0191101020121	5,428.00	5,587.00
2	P.D. A/c	99,738.00	181,623.00
3	Punjab National Bank,A/c No. 13905/0058000100139054	42,822.27	44,333.27
4	UBI S.A. No. 423802010058165	1,203,313.68	2,025,130.14
5	UBI C.A. No. 423801010036638	248,686.85	1,641,498.43
	Total Rs.	1,599,988.80	3,898,171.84

SCHEDULE "B" : INCOME FROM REVENUE FEE

SL. NO.	PARTICULARS	FEE COLLECTED	REFUNDED/ REMITTED	NET COLLECTION
ARTS FACULTY				
1	Admission Fee	119800.00	0.00	119800.00
2	Envoirnment Fees	14010.00	0.00	14010.00
3	Practicle Fees	261000.00	0.00	261000.00
4	Other Fees	22910.00	0.00	22910.00
5	T.C. & Other Fees	920.00	0.00	920.00
6	Tuition Fees	943896.00	76200.00	867696.00
7	Examination Fees	64272.00	0.00	64272.00
8	No Dues Fees	20620.00	0.00	20620.00
9	Red Cross Fees	73070.00	33236.00	39834.00
10	Suvidha Shulk	2985300.00	2451.00	2982849.00
	Total Rs.	4505798.00	111887.00	4393911.00

SCHEDULE "C" :CAPITAL FUND A/C

	PARTICULARS		AMOUNT
ARTS FACULTY			
A.RECEIPTS:			
1	Capital Fund Fee		757417.00
		Transferred to Capital Fund	757417.00

SCHEDULE "D" :TRUST FUND A/C

SL. NO.	PARTICULARS		AMOUNT
ARTS FACULTY			
A.RECEIPTS:			
1	Trust Fund Fee		9735703.00
		Transferred to Trust Fund	9735703.00

SCHEDULE "E" :UNIVERSITY FUND A/C

SL. NO.	PARTICULARS	FEE REMITTED	FEE COLLECTED
ARTS FACULTY			
1	University Fund Account	124614.00	116364.00
	Total	124614.00	116364.00
	Transferred to University Fund		(8250.00)

PRINCIPAL
D.P. VIPRA COLLEGE
BILASPUR (C.G.)

DWARIKA PRASAD VIPRA COLLEGE, HIGH COURT ROAD, BILASPUR (C.G.)

SCHEDULE "F"

PROVIDENT FUND LIABILITY:

PARTICULARS	AMOUNT	AMOUNT
ARTS FACULTY		
Opening Balance as on 01-04-2023		(1,963,621.70)
Add:Credits during the year		384,000.00
		(1,579,621.70)
Less:Part/Final Payment during the year		800,000.00
Closing Balance as on 31-03-2024		(2,379,621.70)

PROVIDENT FUND ASSETS:

SL. NO.	PARTICULARS	AMOUNT	AMOUNT
ARTS FACULTY			
	P.F.BANK A/C:		
	As per last Balance Sheet	5933912.30	
	Add:Deposited during the year	1693959.00	
		7627871.30	
	Less:Withdrawn during the year	800000.00	6827871.30

PRINCIPAL
D.P VIPRA COLLEGE
BILASPUR (C.G.)

DWARIKA PRASAD VIPRA COLLEGE, HIGH COURT ROAD, BILASPUR (C.G.)

SCHEDULE "G" :CURRENT ASSETS

SL. NO.	Particulars	Balance on 01.04.2023	Debit during the year	Credit during the year	Balance as on 31.03.2024
ARTS FACULTY					
1	S.D. Alok Singh Thakur	117519.00	0.00	0.00	117519.00
	Total Rs.	117519.00	0.00	0.00	117519.00

SCHEDULE "H" : CURRENT LIABILITIES & PROVISIONS

SL. NO.	Particulars	Balance on 01.04.2023 Cr./(Dr.)	Debit during the year	Credit during the year	Balance as on 31.03.2024 Cr./(Dr.)
ARTS FACULTY					
1	Advance Salary	338557.00	272275.00	0.00	66282.00
2	CPF Employees	6992834.00	0.00	1309959.00	8302793.00
3	CPF Raipur	85519.00	949959.00	949959.00	85519.00
4	Income Tax (T.D.S.)	0.00	3233510.00	3233510.00	0.00
	Total Rs.	7416910.00	4455744.00	5493428.00	8454594.00

DWARIKA PRASAD VIPRA COLLEGE, HIGH COURT ROAD, BILASPUR (C.G.)

SCHEDULE "I": LOANS & ADVANCES

SL. NO.	Particulars	Balance on 1.4.2023	Given During the year	Recovered during the year	Balance as on 31.03.2024
ARTS FACULTY					
1	Advance to Arjun Singh	124262.00	0.00	124262.00	0.00
2	Advance to Dr. P.K. Mishra	110617.00	0.00	110617.00	0.00
3	Advance to Smt. Anju Shukla	0.00	62590.00	62590.00	0.00
4	Advance to Mahngu Ram Patel	37396.00	0.00	37396.00	0.00
5	Advance to PWD (Building)	5000000.00	0.00	5000000.00	0.00
6	Advance to Toran Yadav	0.00	18520.00	13520.00	5000.00
5	BUB Exam Advance	31303.00	0.00	31303.00	0.00
6	Imprest Account (Smt. Anju Shukla)	0.00	75000.00	75000.00	0.00
7	IQAC A/c	42320.00	0.00	42320.00	0.00
	Total Rs.	5345898.00	156110.00	5497008.00	5000.00

PRINCIPAL
D.P VIPRA COLLEGE
BILASPUR (C.G.)

DWARIKA PRASAD VIPRA COLLEGE, HIGH COURT ROAD, BILASPUR (C.G.)

SCHEDULE "J": CONTINGENCY EXPENSES

SL. NO.	PARTICULARS	AMOUNT
ARTS FACULTY		
1	Advertisment Expenses	14,500.00
2	Audit and Certification Expenses	23,600.00
3	Bank Charges	719.96
4	Consultancy and Corporate Training	35,907.00
5	Electricity Expenses	295,130.00
6	Exam Expenses	39,488.00
7	Function & Celebration	21,730.00
8	Greenary Expenses	8,831.00
9	IQAC Expenses	42,320.00
10	Legal and Professional Expenses	71,300.00
11	Local Conveyance	1,270.00
12	Meeting Expenses	22,858.00
13	Misc Expenses	8,880.00
14	NAAC Expenses	14,330.00
15	News paper and Periodical	560.00
16	Office Expenses	11,650.00
17	Postage and Telegram	367.00
18	Practicle Expenses	9,615.00
19	Printing and Statinery	65,041.00
20	Rent	123,783.00
21	Repair and Maintainance -Computer	45,254.00
22	Repair and Maintainance -Building	11,617.00
23	Repair and Maintainance -Electrical	17,791.00
24	Repair and Maintainance -Furniture	5,250.00
25	Repair and Maintainance -Others	23,889.00
26	Seminar Expenses	1,100.00
27	Sports Expenses	178,780.00
28	Student Union Expenses	13,840.00
29	Travelling Expenses	11,483.00
	Grand Total Rs.	1,120,883.96

PRINCIPAL
D.P VIPRA COLLEGE
BILASPUR (C.G.)

Bilaspur (C.G.)

DWARIKA PRASAD VIPRA COLLEGE, HIGH COURT ROAD, BILASPUR (C.G.)
SCHEDULE 'K' : FIXED ASSETS & DEPRECIATION

SL. NO.	Particulars.	W.D.V.as on 1.4.2023	Addition during the year	Grant Received	Total	Depreciation Rate	Depreciation Amount	W.D.V.as on 31.3.2024
ARTS FACULTY								
	Air Conditoner	0	157560.00		157560.00	7.5%	11817.00	145743.00
	Building Construction (RUSA)	0	1307994.00	1307994.00	0.00	0.00	0.00	0.00
	Canon Photocopier (RUSA)	110839.25	0.00		110839.25	15%	16626.00	94213.25
	Computer A/c	0.00	11024.00		11024.00	40%	4410.00	6614.00
	Computer A/c (RUSA)	192240.00	0.00		192240.00	40%	76896.00	115344.00
	Ducting Cooler	167425.00	0.00		167425.00	15%	25114.00	142311.00
	Electical Installation	73768.00	0.00		73768.00	15%	11065.00	
			13500.00		13500.00	7.5%	1013.00	75190.00
	Equipment (RUSA)	779686.25	1000000.00	1000000.00	779686.25	15%	116953.00	662733.25
	Furniture & Fixtures	54215.20	0.00		54215.20	10%	5422.00	
			239540.00		239540.00	5%	11977.00	276356.20
	ICT A/c	114000.00	0.00		114000.00	40%	45600.00	68400.00
	Librarary Books	79329.30	0.00		79329.30	15%	13999.00	
			7910.00		7910.00	7.5%	593.00	72647.30
	Projector A/c	92480.00	0.00		92480.00	15%	13872.00	78608.00
	Sports Material	474907.00	0.00		474907.00	15%	71236.00	403671.00
	Total Rs.	2138890.00	2737528.00	2307994.00	2568424.00		426593.00	2141831.00

PRINCIPAL
D.P. VIPRA COLLEGE
BILASPUR (C.G.)

DWARIKA PRASAD VIPRA COLLEGE, HIGH COURT ROAD, BILASPUR (C.G.)

SCHEDULE "L"

STATEMENT OF GRANTS (A/c Year 2023-24)

SL. NO.	Particulars	Balance as on 1.4.2023	Received During the year	TFD to Assets/ Refunded	Total	Amount to be Tr.For 2023-24 Rate	Amount	Balance as on 31.03.2024
ARTS FACULTIES								
	GRANT RECEIVED:							
1	Building Grant (RUSA)	1368077.62	1307994.00	1307994.00	1368077.62			1368077.62
2	Grant from UGC For Building	5000000.00	0.00	5000000.00	0.00			0.00
3	Bulding Renovation (RUSA)	0.00	2758501.00	2758501.00	0.00			0.00
4	Equipment Grant (RUSA)	0.00	1000000.00	1000000.00	0.00			0.00
	Total Rs.	6368077.62	5066495.00	10066495.00	1368077.62	0.00	0.00	1368077.62

PRINCIPAL
D.P. VIPRA COLLEGE
BILASPUR (C.G.)

DWARIKA PRASAD VIPRA COLLEGE, HIGH COURT ROAD, BILASPUR (C.G.)

SCHEDULE "M":GENERAL FUND A/C

PARTICULARS	AMOUNT
ARTS FACULTY	
Balance as per last Balance Sheet (Debit)	42323927.30
Add::Deficit during the year	4935048.96
Balance as on 31-03-2023 (Debit)	47,258,976.26

SCHEDULE "N":FUNDS ACCOUNT

SL. PARTICULARS	AMOUNT	AMOUNT
ARTS FACULTY		
01.Capital Fund A/c		
Opening Balance as on 01-04-2022	5199491.32	
Add:Surplus of Capital Fund (Schedule "C")	757417.00	5956908.32
02.Trust Fund A/c		
Opening Balance as on 01-04-2022	39615213.00	
Add:Surplus of Trust Fund (Schedule "D")	9735703.00	49350916.00
03.University Fund A/c		
Opening Balance as on 01-04-2022	2855707.00	
Add:Surplus of University Fund (Schedule "E")	(8250.00)	2847457.00
04.Suvidha Shulk A/c		
Opening Balance as on 01-04-2022	3974950.00	
Add:Surplus of University Fund (Schedule "E")	0.00	3974950.00
Total Rs.		62130231.32

PRINCIPAL
D.P. VIPRA COLLEGE
BILASPUR (C.G.)

DWARIKA PRASAD VIPRA COLLEGE: HIGH COURT ROAD: BILASPUR (C.G.)

SCHEDULE "O"

BALANCE IN FIXED DEPOSITS WITH BANK

SL. NO.	FDR NO.	BALANCE AS ON 01.04.2023	BALANCE AS ON 31.03.2024
ARTS FACULTY			
1	FDR NO.5800PU00016137 (PNB)	3,002,349.00	3,119,871.00
2	FDR NO. 425603236001047 (UBI)	3,000,000.00	-
3	FDR NO. 423803230001120 (UBI)	-	3,200,000.00
4	FDR NO. 423803230001121 (UBI)	-	3,000,000.00
	Total Rs.	6,002,349.00	9,319,871.00

PRINCIPAL
D.P. VIPRA COLLEGE
BILASPUR (C.G.)

DWARIKA PRASAD VIPRA COLLEGE,HIGH COURT ROAD,BILASPUR (C.G.)

SCHEDULE 'P':ACCOUNTING POLICIES & NOTES ON ACCOUNTS

Financial Year:2023-24

SIGNIFICANT ACCOUNTING POLICIES:

i)METHOD OF ACCOUNTING:
The financial statements are prepared on historical cost convention. Keeping in view the objectives and nature of activities, the college is following cash system of accounting.

ii) FIXED ASSETS:
a) Fixed Assets have been stated at their written down value.
b) Depreciation has been provided for on written down value method at the rates and manner prescribed under Income Tax Rules,1962.
c) The cost of fixed assets includes all expenses incidental to acquisition/installation.

iii) GOVERNMENT GRANTS:
a)Revenue grants are recognised in the year of receipt and taken to Income & Expenditure A/c accordingly.
b)Grants received for acquisition of fixed assets are deducted from the cost of assets for which grant is received.

NOTES ON ACCOUNTS:

i)MAINTENANCE GRANT:
During the year the college has received a sum of Rs.1,92,65,682.00 towards Maintenance Grant from Uchcha Shiksha Anudan Ayog.

Note: Schedule 'A' to 'P' form part of accounts.

For Dwarika Prasad Vipra College

Chairman
(Governing Body)

PRINCIPAL
D.P. VIPRA COLLEGE
BILASPUR (C.G.)

FOR M/S ARORA TAWARI & ASSOCIATES
Chartered Accountants

BILASPUR (C.G.)
Date:12-12-2024

(K.L.ARORA)
Partner
M.No.72889
Firm reg. no. 006730C
UDIN: 24072889BKGUKA6408