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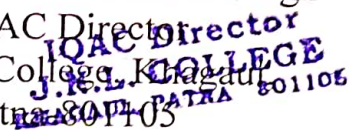
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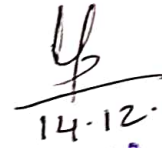
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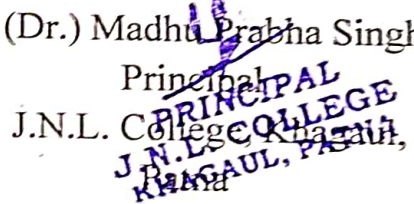
  
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## क्रमिका

लेखक	पृष्ठ स.
रूपण	85-87
डॉ० दिनशमणि त्रिपाठी में नारीवाद	88-94
स्ते हरियाणा के लोकगीत	95-97
व के प्रति बी० एड० कोण का अध्ययन"	98-102
भान एवं चेतना	103-105
चुनौतियों में गाँधी और	106-108
कल्याण मोइत्रा nce of The Female awrence's "the Rainbow"	109-112
व उन्नयन की आशा	113-116
यक्तित्व	117-119
र	120-122
नी का सामाजिक परिदृश्य	123-128
त भाव	126-128
एवं वाहिकाएँ बिलासपुर	129-133
ध निर्देशक: डॉ० ए० सी० त्रिपाठी य, पीड़ा और संवेदनाओं को विमर्श	134-136
नी संग्रह में सामाजिक	137-138
ificance In Modern Economy	139-140
यो में सामाजिक सरोकार	141-142
e Policies Among Rural And ana	143-144
टकों में धर्म और भाग्य	149-150
nen At Home And	152-153
althcare Policies In India	156-160

## अनुक्रमिका

क्र. विषय	लेखक	पृष्ठ स.
43. रामकथा का वैश्विक स्वरूप		162-166
डॉ० मधु प्रभा सिंह		
44. Disaster Management In Business: Preparedness And Adaptation		167-173
Dr. Parul Nagi		
45. गाँधी के विचारों की 21वीं सदी में प्रासांगिकता : महिलाओं के उत्थान में अहिंसा का प्रयोग		174-176
रीता रानी रिहालिया		
46. सूफी पंथ में हठयोग का प्रतिपादन - (पद्मावत के संदर्भ में)		177-180
डॉ० अर्चना शर्मा		
47. हिन्दी साहित्य में 'नारी'		181-184
डॉ० रिहानुर्रहमान		
48. हिन्दी साहित्य में चित्रित दलित विमर्श		185-186
कुलवीर सिंह		
49. अमृत लाल नागर के उपन्यास बूंद और समुद्र में नारी की चित्रित अवस्था का अनुशीलन		187-189
डॉ० प्रवीण कुमार वर्मा		
50. कश्मीरी सूफी कवियों का मुक्तक काव्य: एक अध्ययन		190-192
डॉ० अमृतल राबिया		
51. अमृतलाल नागर के उपन्यास 'बूंद और समुद्र' में निरूपित संयुक्त परिवार		193-195
डॉ० प्रवीण कुमार वर्मा		
52. डॉ० रमाकान्ता लिखित हरियाणावी लघुकथा संग्रह 'माल्लक देखे सै' में चित्रित सामाजिक एवम् आर्थिक यथार्थ		196-198
डॉ० पुष्पा		

## अनुक्रमिका

क्र. विषय	लेखक
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(21)

## Screening and discovery of novel carbamate compounds for cancer therapy

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### ABSTRACT

A 33 KDa serine hydrolase enzyme known as monoacylglycerol lipase is associated with a number of physiological processes in people, including pain, inflammation, and neurodegenerative diseases. The enzyme has been discovered to be associated with the endocannabinoid lipid signalling network system and has been found to be present in both the central and peripheral nervous systems. Enzyme support the growth of cancer and tumour cells by acting as a source of free fatty acids. It has been noted that the enzyme's activity is elevated in dividing and expanding cells in a number of cancer types. The signalling molecules phosphotidic acid, lysophosphatidic acid, sphingosine phosphate, and prostaglandin E2 are found to be free fatty acid-derived and have been linked to the proliferation, migration, and survival of cancer cells. They also rise as a result of enzyme activity. In the current work, we have carried out the identification task and screening investigation for the newly developed carbamate derivatives as anti-cancer moieties using docking and other computational tools.

**Keywords:** Enzyme, Inhibitors, Monoacylglycerol, Lipase, Cancer, Inflammation.

### Introduction

The Monoacylglycerol Lipase (MAGL), a membrane-bound serine hydrolase (Castelli et al., 2020; Jiang & Van Der Stelt, 2018; Malamas et al., 2020; L. Zhang et al., 2019) prevalent in peripheral organs such as the liver, kidney, testis, lungs, prostate, and small intestine as well as the central nervous system, is crucial to the endocannabinoid system (Dato et al., 2020). The endocannabinoid system (eCB) is a lipid signalling network that has been discovered to be present in both the central and peripheral nervous systems (Z. Chen, Mori, Fu, et al., 2019;



**A Concise Review of Natural Derivatives for Breast Cancer Treatments**

**Jhakeshwar Prasad<sup>1</sup>, Tushar Arun Rode<sup>2</sup>, Dr. Pradeep C. Dave<sup>3</sup>, Rashmi<sup>4</sup>, Talquees Ahmad<sup>5</sup>, Pydiraju Kondrapu<sup>6</sup>, Rajeev Ranjan<sup>7</sup>, Ms Ishwari R Chaudhari<sup>8</sup>, Dr. Shubhangi Tripathi<sup>9</sup>\***

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**ABSTRACT:**

**Introduction:** Cancer kills most of the people. Breast cancer will have the highest cases in 2020. Geography, genetics, hormones, oral contraceptives, and lifestyle may cause breast cancer, which may be treated in many ways. Radiation, chemotherapy, hormone treatment, and immunotherapy for breast cancer. Due to non-selectivity, multidrug resistance, and bioavailability, standard breast cancer treatments need to be enhanced. **Aim:** This review's main goal is to provide information about effective natural cancer treatments. **Method:** All the data were collected from published paper which are indexing in SCOPUS, Web of Science and UGC. **Result and Conclusion:** In recent decades, efforts have been made to find anticancer drugs based on phytochemicals. In order to better understand phytochemicals as possible medications and reliable research subjects, the authors wish to expand the field of inquiry. Therefore, understanding of anticancer phytochemicals is stressed for the treatment of breast cancer.

**KEYWORD:** *Phytochemicals, anticancer, preclinical, clinical, medicinal plants, breast cancer.*

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## Visible light triggered regioselective ring expansion of *N*-tosylaziridines: An efficient approach to 2-nitroazetidines



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## ABSTRACT

Visible light induced ring expansion of *N*-tosylaziridines with 1-bromo-1-nitroalkanes to afford 2-nitroazetidines in moderate to excellent yields with high regio- and diastereoselectivity is reported. The salient features of the protocol include the first synthesis of 2-nitroazetidines, operational simplicity, utilization of clean, inexpensive and sustainable resources like visible light and atmospheric oxygen under photoredox catalysis at room temperature in one-pot procedure.

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## Introduction

Nature's ability to utilize solar energy (visible light) in the photosynthesis has inspired a flurry of activity in visible light activated synthetically useful catalytic organic transformations.<sup>1–4</sup> Visible light is easy to handle and unending clean natural energy source having great prospects for designing and realizing sustainable protocols for organic synthesis.<sup>5</sup> Basically, the success of this strategy relies on the pioneering work of the groups of MacMillan,<sup>1</sup> Yoon<sup>2</sup> and Stephenson,<sup>3</sup> who efficiently employed Ru(bpy)<sub>3</sub>Cl<sub>2</sub> (bpy = 2,2'-bipyridine) and Ir(drbbpy)<sub>3</sub>Cl<sub>2</sub> as photoredox catalysts.

Advantageously, visible light photoredox catalysis has offered a new route to utilize atmospheric oxygen in organic synthesis. Mostly, atmospheric oxygen acts as an oxidant to regenerate photocatalysts from their radical anion to complete the catalytic cycle with concomitant formation of the superoxide radical (O<sub>2</sub><sup>•-</sup>), which has also been utilized in situ for oxidative functionalizations in organic synthesis.<sup>1e,2b,3,6,7</sup>

In organic synthesis, azetidines are targeted due to their interesting chemical properties and biological importance.<sup>8–10</sup> The azetidine ring system features in many medicinal molecules some of which are remarkably effective against influenza-A, H2N2 virus<sup>11</sup> and have anti-HIV-1 and HSV-2 potential.<sup>12</sup> The inherent strain associated with the azetidine ring leads to difficulties in its forma-

tion, functionalizations and modifications, but is it beneficial for its synthetically useful ring opening reactions. Thus, several functionalized azetidines act as masked 1,4-dipoles in the synthesis of five- and six-membered aza-heterocycles.<sup>13</sup>

The literature records numerous reports on the synthesis of substituted azetidines either directly or indirectly,<sup>14–18</sup> but the synthesis of *C*-nitroazetidines has been scarcely undertaken although they attract special interest because of their nitro group, which can serve as precursor to functional groups such as oximes, hydroxylamines, amines and ketones (Nef reaction). Brandi and coworkers have published an excellent review covering the synthesis of azetidines including the important synthetic approaches to azetidines involving ring expansion of aziridines.<sup>19</sup> Recently, Xia and co-workers have reported highly regioselective nucleophilic ring opening of aziridines under visible light photoredox catalysis (Scheme 1a).<sup>20</sup>

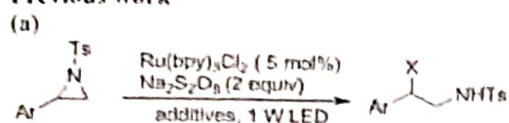
In view of the above discussion and our recent research focused on the development of new synthetic methods employing visible light photoredox catalysis,<sup>21</sup> we envisioned that visible light mediated activation of aziridines would facilitate their regioselective nucleophilic ring opening and closing with 1-bromo-1-nitroalkanes to afford nitroazetidines under mild conditions (Scheme 1b).

To realize the envisioned ring opening and cyclization reaction, the key reaction of *N*-tosylaziridine **1a** (1.0 mmol) with 1-bromo-1-nitroalkane **2a** (1.0 mmol) in acetonitrile (3 mL) in the presence of a base Cs<sub>2</sub>CO<sub>3</sub> (2 equiv) and a catalytic amount of [Ru(bpy)<sub>3</sub>]Cl<sub>2</sub> (2 mol%) was performed. The reaction mixture was irradiated with

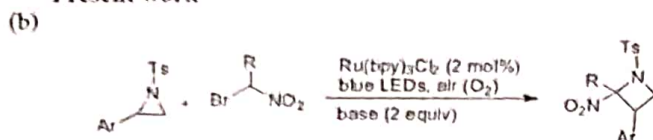
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## Previous work



## Present work



**Scheme 1.** (a) Visible light promoted ring opening, and (b) ring expansion of aziridines.

visible light (blue light emitting diode (LED),  $\lambda = 447.5$  nm) for 18 h at room temperature in an air atmosphere.

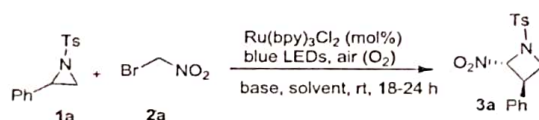
We were delighted to get the ring-expanded product 2-nitroazetidine **3a** in an excellent yield of 89% and complete regioselectivity (Table 1, entry 1) and high diastereoselectivity (*E/Z* ratio 91:9 as determined by  $^1\text{H}$  NMR spectroscopy of the crude isolate). The ring expansion of **1a** under visible light photoredox catalysis afforded only the regioisomer derived from opening of the aziridine ring at the benzylic carbon. Then, the control experiments were performed, which show that a base, photocatalyst, air ( $\text{O}_2$ ) and light all are essential for the reaction, because in the absence of any of the reagents/reaction parameters the product was not detected/formed in traces (Table 1, entries 2, 3, 13 and 14). It was noted that the same result was obtained on using  $\text{O}_2$  balloon instead of an air atmosphere (Table 1, entry 1 vs 4). The inorganic

bases like  $\text{Na}_2\text{CO}_3$ ,  $\text{K}_2\text{CO}_3$  and  $\text{Cs}_2\text{CO}_3$  were more effective in terms of the yield and reaction time in comparison to organic bases such as DABCO and DBU (Table 1, entries 1, 5 and 6 vs 7 and 8). This is probably because of the involvement of amine bases in photoredox cycle of the catalyst  $[\text{Ru}(\text{bpy})_3]\text{Cl}_2$ , which results in a considerable decrease in the yield. The optimum catalyst loading delivering the maximum yield in the shortest reaction time was 2 mol%. On decreasing the amount of photocatalyst from 2 mol% to 1 mol%, the yield was significantly reduced (Table 1, entry 1 vs 12), whereas there was no enhancement in the yield on increasing the catalyst loading from 2 mol% to 3 mol% (Table 1, entry 1 vs 11).

Next, we optimized the reaction for an effective solvent and  $\text{CH}_3\text{CN}$  was found to be the best among tested solvents THF, DMF and  $\text{CH}_3\text{CN}$ , hence it was used throughout the present study (Table 1, entry 1 vs 9 and 10). Notably the reaction was quenched with 2,2,6,6-tetramethylpiperidyl-1-oxyl (TEMPO) (2 mol%), which indicates that a radical intermediate may be involved in the reaction (Table 1, entry 15).

Under the optimized reaction conditions, we examined the generality and scope of the present ring expansion reaction across a range of *N*-tosylaziridines **1** incorporating various substituents like Cl, Br,  $\text{NO}_2$ , F, Me and MeO, which are well tolerated under the present reaction conditions. The reaction worked well in all cases and afforded *N*-tosylazetidines **3** in moderate to excellent yields with complete regioselectivity and high diastereoselectivity (Table 2). The diastereomeric *E/Z* ratios in crude isolates were determined by  $^1\text{H}$  NMR spectroscopy. On subsequent purification by silica gel column chromatography, pure sample of the major diastereomer (*E*) was obtained (Table 2). 2-Arylaziridines bearing an electron-donating group appear to react faster and afford slightly higher yields in comparison to those bearing an electron-withdrawing group (Table 2, entries 8 and 9 vs 1–6). Unsubstituted, alkyl, or fused ring aziridines (Table 2, entries 10–15) are also suitable

**Table 1**  
Optimization of reaction conditions.<sup>a</sup>



Entry	Photocatalyst (mol%)	Base (2 equiv)	Air	Solvent	Time (h)	Yield <sup>b</sup> (%)
1	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	$\text{Cs}_2\text{CO}_3$	+	$\text{CH}_3\text{CN}$	18	89
2	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	–	+	$\text{CH}_3\text{CN}$	18	Traces
3	–	$\text{Cs}_2\text{CO}_3$	+	$\text{CH}_3\text{CN}$	24	n.d. <sup>c</sup>
4	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	$\text{Cs}_2\text{CO}_3$	$\text{O}_2$	$\text{CH}_3\text{CN}$	18	89 <sup>d</sup>
5	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	$\text{Na}_2\text{CO}_3$	+	$\text{CH}_3\text{CN}$	18	76
6	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	$\text{K}_2\text{CO}_3$	+	$\text{CH}_3\text{CN}$	18	82
7	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	DABCO	+	$\text{CH}_3\text{CN}$	24	58
8	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	DBU	+	$\text{CH}_3\text{CN}$	24	69
9	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	$\text{Cs}_2\text{CO}_3$	+	THF	20	13
10	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	$\text{Cs}_2\text{CO}_3$	+	DMF	20	71
11	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (3)	$\text{Cs}_2\text{CO}_3$	+	$\text{CH}_3\text{CN}$	18	89
12	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (1)	$\text{Cs}_2\text{CO}_3$	+	$\text{CH}_3\text{CN}$	24	57
13	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	$\text{Cs}_2\text{CO}_3$	$\text{N}_2$	$\text{CH}_3\text{CN}$	18	Traces
14	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	$\text{Cs}_2\text{CO}_3$	+	$\text{CH}_3\text{CN}$	24	Traces <sup>e</sup>
15	$\text{Ru}(\text{bpy})_3\text{Cl}_2$ (2)	$\text{Cs}_2\text{CO}_3$	+	$\text{CH}_3\text{CN}$	18	Traces <sup>f</sup>

<sup>a</sup> Reaction conditions: *N*-tosylaziridine **1a** (1.0 mmol), halonitromethane **2a** (1.0 mmol),  $\text{Ru}(\text{bpy})_3\text{Cl}_2$  (2 mol%), base (2 equiv), solvent (3 mL), open to air (without bubbling air) irradiation at rt through the flask's bottom side using Luxeon Rebel high power blue LEDs (4.45 W,  $\lambda_{\text{max}} = 447.5$  nm).

<sup>b</sup> Isolated yield of pure product **3a**.

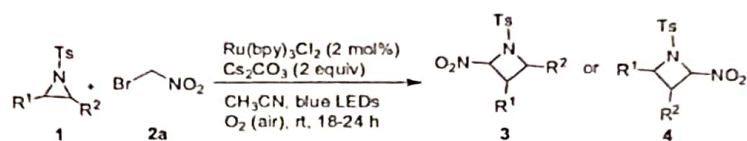
<sup>c</sup> Reaction was carried out without catalyst; n.d. = not detected.

<sup>d</sup>  $\text{O}_2$  balloon was used.

<sup>e</sup> Reaction was performed in the dark.

<sup>f</sup> Reaction was quenched with TEMPO (2 mol%).

**Table 2**  
Substrate scope for ring expansion of aziridines.<sup>a</sup>



Entry	Substrate	Product	Time (h)	Yield <sup>b</sup> (%)	E/Z
1			18	89	91:9
2	<b>1b</b> , R = 2-Cl	<b>3b</b>	22	78	96:4
3	<b>1c</b> , R = 4-Cl	<b>3c</b>	22	85	94:6
4	<b>1d</b> , R = 3-Cl	<b>3d</b>	22	87	95:5
5	<b>1e</b> , R = 4-Br	<b>3e</b>	22	86	94:6
6	<b>1f</b> , R = 4-NO <sub>2</sub>	<b>3f</b>	24	71	95:5
7	<b>1g</b> , R = 4-F	<b>3g</b>	24	74	92:8
8	<b>1h</b> , R = 4-Me	<b>3h</b>	18	92	93:7
9	<b>1i</b> , R = 4-OMe	<b>3i</b>	18	94	94:6
10			18	86	–
11	<b>1k</b>	<b>3k</b>	18	88	93:7 <sup>d</sup>
12	<b>1l</b>	<b>3l</b>	18	84	92:8 <sup>d</sup>
13	<b>1m</b>	<b>3m</b>	18	81	93:7 <sup>d</sup>
14	<b>1n</b>	<b>4n</b>	20	83	95:5
15	<b>1o</b>	<b>4o</b>	20	85	92:8
16	<b>1p</b>	<b>3p</b>	22	53	96:4 <sup>e</sup>

<sup>a</sup> For experimental procedure, see Ref. 22.

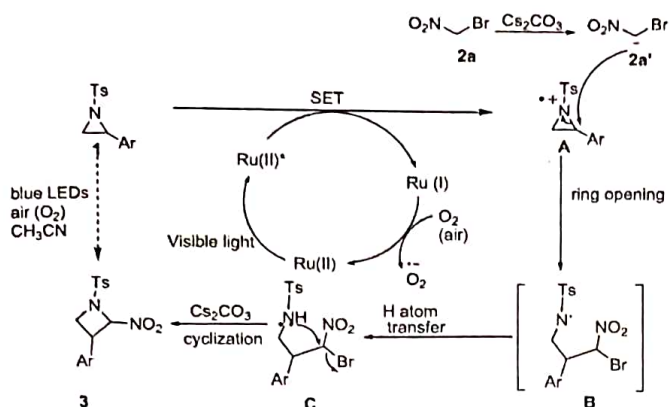
<sup>b</sup> Yields of isolated pure major diastereomer (E).

<sup>c</sup> As determined by <sup>1</sup>H NMR spectroscopy of the crude isolates.

<sup>d</sup> E-E:Z-E ratio.

<sup>e</sup> 1-Bromo-1-nitroethane (**2b**) was used instead of **2a**.





Scheme 2. Plausible mechanism for the formation of 2-nitroazetidines.

substrates for the present protocol as they afford 81–88% yields of a single regioisomer with high diastereoselectivity. Moreover, when 1-bromo-1-nitroethane (**2b**) was used instead of bromonitromethane (**2a**), the yield was significantly decreased (Table 2, entry 1 vs 16). This is probably because of relatively larger size of **2b** than **2a**, which causes steric hindrance in both the nucleophilic ring opening and ring closing steps. The reaction of 2-arylaziridines **1** with 1-bromo-1-nitroalkanes **2** afforded 2-nitroazetidines **3** with complete regioselectivity via nucleophilic attack at the benzylic carbon. This is easily understandable in the light of a greater carbocationic character due to resonance effect at the benzylic carbon in the radical cation **A** (Scheme 2), that is, here the electronic factor overrides the steric factor. On the other hand, in the case of 2-alkylaziridines, complete regioselectivity of nucleophilic attack at the less hindered carbon of the aziridine ring was observed to afford 2-nitroazetidines **4**, that is, here the steric factor dominates.

Based upon our observations and literature reports,<sup>6b,20,23</sup> a plausible mechanism is depicted in Scheme 2. On irradiation with visible light Ru(II) undergoes excitation to Ru(II)\* followed by single electron transfer (SET) with aziridine **1** to render the radical cation **A** and Ru(I). The photoredox cycle is completed by the oxidation of Ru(I) to Ru(II) with atmospheric oxygen. The formation of superoxide radical anion ( $O_2^-$ ) was confirmed by a test with KI/starch indicator.<sup>24</sup> Nucleophilic ring opening of the radical cation **A** with the anion **2a'** leads to amine intermediate **B**, which undergoes hydrogen atom transfer and subsequent 4-*exo*-tet annulation to give the desired product **3** (Scheme 2).

In conclusion, we have developed a convenient, efficient and highly diastereoselective synthesis of 2-nitroazetidines by a complete regioselective ring expansion of *N*-tosylaziridines with 1-bromo-1-nitroalkanes under visible light photoredox catalysis with Ru(II) and an air atmosphere. This is the first synthesis of 2-nitroazetidines. Advantageously, the protocol utilizes green and sustainable natural resources like visible light and atmospheric oxygen at room temperature in a one-pot procedure.

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- General procedure for the synthesis of 2-nitroazetidines **3** or **4**: A mixture of *N*-tosylaziridine **1** (1.0 mmol), 1-bromo-1-nitroalkane (**2**, 1.0 mmol) (1.0 mmol), Ru(bpy)<sub>3</sub>Cl<sub>2</sub> (2 mol%), Cs<sub>2</sub>CO<sub>3</sub> (2 equiv) and acetonitrile (3 mL) was stirred at rt in open air (without bubbling air) under irradiation with blue LEDs (4.45W, λ<sub>max</sub> = 447.5 nm) for 18–24 h (Table 1). After completion of the reaction (monitored by TLC), water 5 mL was added and the mixture was extracted with ethyl acetate (3 × 5 mL). The combined organic phase was dried over anhydrous Na<sub>2</sub>SO<sub>4</sub>, filtered and evaporated under reduced pressure. The resulting crude product was purified by silica gel chromatography using a

mixture of hexane/ethyl acetate (4:1) as eluent to afford an analytically pure sample of product **3** or **4**. Characterization data of representative compounds **3** and **4** are given below: Compound **3a**. <sup>1</sup>H NMR (300 MHz, CDCl<sub>3</sub>) δ: 7.77 (d, *J* = 8.2 Hz, 2H<sub>arom</sub>), 7.44 (d, *J* = 8.2 Hz, 2H<sub>arom</sub>), 7.35–7.25 (m, 5H<sub>arom</sub>), 6.30 (d, *J* = 6.7 Hz, 1H, CHNO<sub>2</sub>), 3.99 (dd, *J* = 7.9, 6.5 Hz, 1H, NCH<sub>2</sub>), 3.75 (dd, *J* = 7.9, 6.3 Hz, 1H, NCH<sub>2</sub>) 3.61 (m, 1H, PhCH), 2.39 (s, 3H). <sup>13</sup>C NMR (75 MHz, CDCl<sub>3</sub>) δ: 148.3, 137.7, 136.7, 129.4, 128.5, 128.4, 126.3, 125.8, 106.9, 47.5, 31.2, 21.4. HRMS (EI): calcd for C<sub>16</sub>H<sub>16</sub>N<sub>2</sub>O<sub>4</sub>S: 332.0831, found 332.0828. Compound **3h**. <sup>1</sup>H NMR (300 MHz, CDCl<sub>3</sub>) δ: 7.76 (d, *J* = 8.2 Hz, 2H<sub>arom</sub>), 7.42 (d, *J* = 8.2 Hz, 2H<sub>arom</sub>) 7.20–7.15 (m, 4H<sub>arom</sub>), 6.27 (d, *J* = 6.7 Hz, 1H, CHNO<sub>2</sub>), 3.97 (dd, *J* = 7.9, 6.5 Hz, 1H, NCH<sub>2</sub>), 3.72 (dd, *J* = 7.9, 6.3 Hz, 1H, NCH<sub>2</sub>), 3.52 (m, 1H, ArCH), 2.38

(s, 3H), 2.32 (s, 3H). <sup>13</sup>C NMR (75 MHz, CDCl<sub>3</sub>) δ: 145.6, 137.7, 136.8, 135.7, 129.4, 128.8, 128.3, 126.1, 107.0, 47.5, 31.2, 21.4, 21.2. HRMS (EI): calcd for C<sub>17</sub>H<sub>18</sub>N<sub>2</sub>O<sub>4</sub>S: 346.0987, found 346.0991. Compound **4n**. <sup>1</sup>H NMR (300 MHz, CDCl<sub>3</sub>) δ: 7.74 (d, *J* = 8.2 Hz, 2H<sub>arom</sub>), 7.42 (d, *J* = 8.2 Hz, 2H<sub>arom</sub>), 7.38–7.26 (m, 5H<sub>arom</sub>), 5.76 (dd, *J* = 7.8, 3.9 Hz, 1H, CHNO<sub>2</sub>), 3.91 (m, 1H, CH<sub>2</sub>-CH-CH<sub>2</sub>), 2.61–2.85 (m, 4H, 2 × CH<sub>2</sub>), 2.38 (s, 3H). <sup>13</sup>C NMR (75 MHz, CDCl<sub>3</sub>) δ: 138.8, 137.7, 136.8, 129.3, 128.5, 128.3, 128.1, 126.0, 98.5, 53.6, 40.0, 23.6, 21.4. HRMS (EI): calcd for C<sub>17</sub>H<sub>18</sub>N<sub>2</sub>O<sub>4</sub>S: 346.0987, found, 346.0984

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## Visible Light Activated Radical Denitrative Benzoylation of $\beta$ -Nitrostyrenes: A Photocatalytic Approach to Chalcones

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**Abstract** A metal-free, convenient photocatalytic approach to chalcones from  $\beta$ -nitrostyrenes and benzaldehydes via a radical denitrative benzoylation pathway is reported. The salient features of the protocol include the utilization of visible light as an inexpensive and eco-sustainable energy source, *N*-hydroxyphthalimide (NHPI) as a reusable organo-photocatalyst and acetonitrile as an acceptable green solvent to afford chalcones in excellent yields at room temperature in a one-pot procedure. Notably, this is the first application of  $\beta$ -nitrostyrenes as readily available substrates for chalcone synthesis and the first example of photocatalysis in this field.

**Keywords:** C=C bond formation; organic catalysis; photochemistry; radicals; synthetic methods; visible light

Chalcones constitute a privileged family of compounds in the perspectives of medicinal and synthetic chemistry. They exhibit various useful biological activities such as analgesic, anti-viral, anti-inflammatory, anti-ulcerative, anti-fungal, anti-malarial, anti-bacterial and anticancer activities.<sup>[1]</sup> Some chalcone-based drugs are in clinical use, for example, metochalcone, a choleric drug and sofalcone as an antiulcer and mucoprotective drug (Figure 1). Chalcones incorporate a very good synthon, which renders them valuable intermediates for the synthesis of flavonoids,<sup>[2]</sup> flavones<sup>[3]</sup> and a diverse range of heterocycles namely, thiazine, oxazine, isoxazole, pyrazole, diazepine, pyridine and pyrimidine.<sup>[4]</sup>

Owing to their tremendous chemical and biological importance, chalcones have been extensively studied, which is evident from the appearance of numerous reviews<sup>[5]</sup> thoroughly covering their synthesis, applica-

tions and biological significances from various angles. Traditionally, acids/bases catalysed homogeneous and heterogeneous Claisen-Schmidt condensation was used for the practical synthesis of chalcones.<sup>[6]</sup> However, drawbacks of non-appositeness for the substrate bearing acid/base sensitive groups, slow reaction rate and very often generation of complex mixture during the condensation reaction, led to the development of many superior alternative methods for the synthesis of chalcones. In this context, different catalytic systems such as organolithium compounds,<sup>[7]</sup> modified phosphates,<sup>[8]</sup> zinc oxide,<sup>[9]</sup>  $KF \cdot Al_2O_3$ ,<sup>[10]</sup> phase transfer catalysts,<sup>[11]</sup> hydrotalcites and zeolites<sup>[12]</sup> have been employed for the synthesis of chalcones. Again, these processes suffer from the impediment of difficult catalyst recovery and purification of the desired products.

To overcome the difficulty associated with the foregoing routes, highly efficient, pioneering and

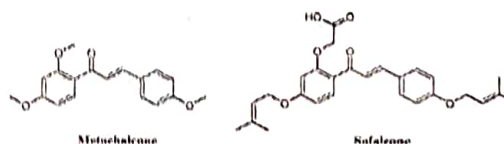


Figure 1. Chalcone-based drugs in clinical use.

celebrated cross coupling methodologies such as Suzuki,<sup>[13]</sup> Heck<sup>[14]</sup> and Julia-kocienski<sup>[15]</sup> cross couplings have been recently used for the synthesis of chalcones (Scheme 1a). Though these metal-catalysed couplings are very effective for chalcone synthesis, most of them are very expensive and hazardous to the environment. Thus, the development of a metal-free, environmentally benign, cost effective and sustainable

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## Visible-light-enabled denitrative carboxylation of $\beta$ -nitrostyrenes: a direct photocatalytic approach to cinnamic acids†

Shubhangi Tripathi and Lal Dhar S. Yadav\*

The first workable application of  $\beta$ -nitrostyrenes and  $\text{CBr}_4$  as coupling partners for a highly stereoselective synthesis of (*E*)-cinnamic acids under visible light photoredox catalysis is reported. The reaction involves a radical denitrative tribromomethylation/hydrolysis cascade to afford (*E*)-cinnamic acids in excellent yields at room temperature in a one-pot procedure. Moreover, the implementation of visible light as a clean and inexpensive energy source and  $\text{CBr}_4$  as the latent source of carboxylic groups makes the protocol reconcilable with the present day scenario of organic synthesis.

### Introduction

Cinnamic acids are ubiquitous in green plants and constitute a privileged family of organic acids that are key features of various compounds possessing antifungal,<sup>1</sup> antimicrobial,<sup>2</sup> antioxidant,<sup>3</sup> antitumor,<sup>4</sup> antitubercular,<sup>5</sup> anticancer,<sup>6</sup> antimalarial<sup>7</sup> and antithrombotic<sup>8</sup> activities. The ability of cinnamic acids to alter the potency, permeability and solubility parameters of a selected drug makes them valuable scaffolds from a medicinal standpoint.<sup>9</sup> In addition, substituted cinnamic acids also have a wide range of applications as anti-allergic agents,<sup>10</sup> as corrosion inhibitors,<sup>11</sup> in veterinary preparations,<sup>12</sup> in topical formulations,<sup>13</sup> in the synthesis of macromolecules<sup>14</sup> and flavouring agents, in perfume production,<sup>6</sup> and in pharmaceuticals and medicines (*viz.* ozagrel,<sup>15a</sup> a thromboxane A<sub>2</sub> synthase inhibitor; piplartine,<sup>15b</sup> an anticancer drug; and cinromide,<sup>15c</sup> an antiepileptic drug) (Fig. 1). Immensely important compounds such as substituted styrenes,<sup>12,14,16</sup> stilbenes, cinnamic esters and cinnamic amides have also been prepared from cinnamic acids.<sup>12,19</sup>

Owing to their diverse biological activities and marvellous synthetic utilities, numerous strategies have been developed for the practical synthesis of cinnamic acids. Traditionally, cinnamic acids are prepared by the Perkin reaction<sup>19</sup> and Claisen-Schmidt condensation.<sup>20</sup> However, very often generation of undesired side products and difficult handling of sodium metal have prompted researchers to devise superior alternatives for the synthesis of cinnamic acids. Consequently, the microwave assisted Knoevenagel

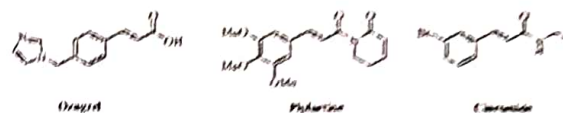


Fig. 1 Some cinnamic acid-based therapeutic agents.

condensation,<sup>21</sup> Knoevenagel-Doebner modification,<sup>22</sup> enzymatic method<sup>23</sup> and phosphorus oxychloride method<sup>24</sup> have been developed. Furthermore, the literature has recorded several reports on the remarkable application of the celebrated Heck reaction to the synthesis of cinnamic acids employing various Pd-based catalytic systems.<sup>25</sup> Although cinnamic acids have been synthesised by various aforesaid methods, all of them have their own intricacies such as tedious implementation of the process, lower efficiencies, long reaction times, loss of catalytic activity, lower yields of the desired product and limited substrate scopes.

In recent years, to replace obsolescent synthetic methodologies and to develop eco-sustainable, more advantageous and mild reaction conditions, visible light photoredox catalysis has emerged as a burgeoning strategy for chemical transformations.<sup>26–29</sup> The seminal work of the research groups of MacMillan,<sup>26</sup> Yoon<sup>27</sup> and Stephenson<sup>28</sup> has demonstrated the pivotal role of ruthenium- and iridium-based polypyridyl complexes in single electron transfer (SET) processes for the formation of C–C bonds with a minimum number of operations and almost negligible waste generation. However, despite the colossal application of photoredox catalysis to the construction of the C–C bond to yield important scaffolds, a careful survey of the literature reveals that photoredox catalysis has never been applied to the synthesis of cinnamic acids.

During the past few years, several research groups,<sup>28a,c,31a,b</sup> including our own,<sup>30a,b,31c</sup> have employed  $\text{CBr}_4$  for the generation of

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† Electronic supplementary information (ESI) available: Experimental details, characterization data and copies of <sup>1</sup>H and <sup>13</sup>C spectra for the products. See DOI: 10.1039/c7nj04570f



RESEARCH

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# Characterization of contrasting rice (*Oryza sativa* L.) genotypes reveals the Pi-efficient schema for phosphate starvation tolerance

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## Abstract

**Background:** Phosphorus (P), being one of the essential components of nucleic acids, cell membranes and enzymes, indispensable for diverse cellular processes like photosynthesis/carbohydrate metabolism, energy production, redox homeostasis and signaling. Crop yield is severely affected due to Phosphate (Pi) deficiency; and to cope with Pi-deficiency, plants have evolved several strategies. Some rice genotypes are compatible with low Pi availability, whereas others are sensitive to Pi deficiency. However, the underlying molecular mechanism for low Pi tolerance remains largely unexplored.

**Result:** Several studies were carried out to understand Pi-deficiency responses in rice at seedling stage, but few of them targeted molecular aspects/responses of Pi-starvation at the advanced stage of growth. To delineate the molecular mechanisms for low Pi tolerance, a pair of contrasting rice (*Oryza sativa* L.) genotypes [viz. Pusa-44 (Pi-deficiency sensitive) and its near isogenic line (NIL-23, Pi-deficiency tolerant) harboring *Phosphorus uptake 1 (Pup1)* QTL from an *aus* landrace Kasalath] were used. Comparative morphological, physiological, and biochemical analyses confirmed some of the well-known findings. Transcriptome analysis of shoot and root tissues from 45-day-old rice plants grown hydroponically under P-sufficient (16 ppm Pi) or P-starved (0 ppm Pi) medium revealed that Pi-starvation stress causes global transcriptional reprogramming affecting several transcription factors, signaling pathways and other regulatory genes. We could identify several significantly up-regulated genes in roots of NIL-23 under Pi-starvation which might be responsible for the Pi starvation tolerance. Pathway enrichment analysis indicated significant role of certain phosphatases, transporters, transcription factors, carbohydrate metabolism, hormone-signaling, and epigenetic processes in improving P-starvation stress tolerance in NIL-23.

**Conclusion:** We report the important candidate mechanisms for Pi acquisition/solubilization, recycling, remobilization/transport, sensing/signalling, genetic/epigenetic regulation, and cell wall structural changes to be responsible for P-starvation tolerance in NIL-23. The study provides some of the novel information useful for improving phosphorus-use efficiency in rice cultivars.

**Keywords:** Rice, Phosphorus starvation, Stress tolerance, Transcriptome analysis, Phosphatase, Transporter, Transcription factor, Root development

## Background

Phosphorus (P) is one of the most important macronutrients necessary for the living organisms including plants. It is a vital constituent of several biological

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# Impact of Seed Applied Rhizobacterial Inoculants on Growth of Wheat (*Triticum aestivum*) and Cowpea [*Vigna unguiculata*] and their Influence on Rhizospheric Microbial Diversity

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**Abstract** Current study was planned to demonstrate (Experiment I), the impact of seed bacterization (inoculation dose— $10^6$ ,  $10^8$ ,  $10^{10}$ ,  $10^{12}$  CFU/ml) with two bacterial isolates *Variovorax paradoxus* RAA3 and M11 (Unidentified) on growth and foliar nutrient content (NPK) of wheat (var. H1105 and PBW660) and cowpea (var. PL-1 and PL-2) cultivars under glass house conditions. Strain RAA3 treated plants exhibited most promising results for shoot fresh weight (26.7%, 30.2%), shoot dry weight (44.4%, 63.3%) and chlorophyll content (66.8%, 66.9%) as compared to the control plants of respective varieties. This inoculant also caused significant changes in the foliar nitrogen (14.5%, 14.2%), phosphorus (36.4%, 46.7%) and potassium (20.1%, 65.9%) content in wheat and cowpea, respectively, as compared to the non-inoculated plants. Moreover, the inoculum dose of  $10^8$  of bacterial inoculum was found to be most effective and thus, considered as an optimum dose for the plant growth promotion. In another study (Experiment II), seed bacterization with RAA3 ( $10^8$  CFU/ml) on nine different varieties of wheat was performed, and significant varietal and treatment effect were observed for many of growth parameters as compared to untreated control plants. Overall results showed maximum response at inoculum dose of  $10^8$ , therefore this dose was taken to assess the influence of PGPR inoculation on rhizospheric microbial diversity of wheat and cowpea. We observed that RAA3 inoculation has led to a shift in microbial population in both wheat and cowpea varieties. Irrespective of varieties, RAA3 (inoculum dose of  $10^8$  CFU/ml) treated plants of wheat showed dominant microbial groups of siderophores producers, nitrogen fixers and actinomycetes, whereas, in RAA3 treated plants of cowpea the dominant microbial population of only siderophores producers was recorded.

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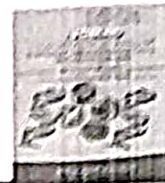
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**Keywords** PGPR · *Variovorax paradoxus* · Seed bacterization · Siderophores · Nitrogen fixers · Actinomycetes · Inoculum dose · Nutrient content

## Introduction

A steady increase in the world population provides new challenges to assure food security. Availability of arable land, poorly managed production factors like water resources and long-term effects are brought up by climatic changes, could all make to possible disastrous consequences [1, 10, 15]. Moreover, the soil is the main prerequisite for crop production. The perpetual application of chemical fertilizers, insecticides, fungicides and herbicides disturb natural soil ecosystem; deteriorate soil condition making it deprive of essential nutrients. Thus, need of the



Original Research Article

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## Evaluation of Native AMF Population for Drought Stress Ameliorating Potential in Finger Millet

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### ABSTRACT

#### Keywords

Water uptake, growth, Plant nutritional status, Protein, Fat, Minerals

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Finger millet is a very important crop because of its resilience against adverse climatic conditions. It is well adapted to higher elevations, drought tolerant, disease resistant and able to grow on marginal lands with poor soil fertility, which reflects in having highest productivity among millets. Also, it is a good source of protein, fat, and minerals. All these factors make it suitable especially among the segment of low-income group populations. Arbuscular mycorrhizal fungi (AMF) are capable of reducing the adverse effects of drought on plants. Recently, there is a growing interest in the Finger millet-AMF symbiosis in relation to enhancing water uptake, growth, plant nutritional status and yield. However, to our knowledge, there is no study performed related to the application of native mycorrhizal population in improving drought tolerance of finger millet. Native mycorrhiza inoculation resulted enhanced biomass production compared to than non-mycorrhizal finger millet plants, irrespective of soil water status. In addition, AMF inoculation led to significantly higher nutrient and biochemical status of plants. Our results support the idea of exploiting native mycorrhizal population in improving the drought tolerance of finger millet plants.

### Introduction

Among all the rhizospheric microbes, arbuscular mycorrhizal fungi (AMF) are the most interesting, incapable of living without their host plants, they form the most abundant of symbiotic association on earth. The AMF belong to the phylum Glomeromycota and are represented by 230 species (Oehl *et al.*, 2011). The mutualistic association of AMF with most of the vascular plant roots results in increased

uptake of water, inorganic nutrients, enhanced tolerance to many environmental stress and protection from pathogens for the host and in reward of this, fungus gets the carbon assimilates from host, essential for its survival (Smith and Read, 1997). It is evident by many studies that AMF are crucial for the functioning of terrestrial ecosystems. Not only their presence but also their genetic and functional diversities are of importance: AMF diversity can be decisive for both plant

# Augmentation of Native Mycorrhizal Population and its Functionality Using *Parthenium* Biochar



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## Abstract

*Parthenium* is one of the world's deadliest weeds and its highly allelopathic nature is a major cause of crop yield reduction. There has been growing interest in production of biochar from *parthenium* by pyrolysis, as a weed control strategy. Biochar is the carbonaceous residue left after pyrolysis, and many studies have found its application in maintaining soil quality by improving its physical, chemical and biological properties. Arbuscular Mycorrhizal Fungi (AMF) are inseparable component of soil microbial community forming mutualistic relationship with almost 80% of plant species. They play an important role in maintaining soil fertility and plant health nutrition. The present study was carried out to study the effect of different application rates of *Parthenium* biochar (0g/kg, 1g/kg, 3g/kg, 5g/kg and 10g/kg) on the native AMF population of three altitudes of Kumaun Himalayas and maize plant growth under greenhouse conditions. The results indicate positive influence of biochar application on AMF population and root colonization. In addition, the integrated application of AMF and biochar also resulted in enhanced plant growth and foliar nutrient content in maize plants when compared to control plants. The study suggests the utility of *Parthenium* biochar as soil management practice with multifaceted ability to promote AMF population of soil as well as plant health.

**Keywords:** Arbuscular mycorrhiza fungi; *Parthenium*; Biochar; Maize (*Zea mays*); Plant growth

## Introduction

Sustainable soil fertility management has been suggested as essential to the prosperity. Hilly regions of Uttarakhand have prevalence of rain-fed conditions, resulting in water stress which restricts the optimum plant growth. Also, soils from these regions are shallow and coarse textured thus have a poor soil structure and low water-holding capacity. Datta and Handal, highlighted the nitrogen and organic matter deficiency of soil in South and South East Asian countries. Furthermore, the organic manure used in these areas is made from oak and chir pine leaves which results in the acidification of the soil [1]. Thus, for achieving high agriculture productivity the focus should also be on improving soil health as only then sustainable agriculture system can be achieved.

External carbon input as amendment into these marginalized soil for uplifting the soil organic matter and health has been recommended by many researchers [2]. Traditional soil amendments include farmyard manure, composted manure, poultry manure and cattle manure [3,4]. However, in the recent times soil amendment with biochar has gained interest among the researchers as well as among the farmers because of the inherent advantages associated with it. Biochar is a collective term for carbon rich soil amendments of either plant or animal biomass through heating

at 300 to 600 °C under limited oxygen supply [5]. Increased soil water-holding capacity has been observed on biochar addition to sandy-loamy soil [6]. Also, improvement in hydraulic conductivity of soil along with an increased rice yield in low P availability can be achieved after biochar addition [7]. Studies have indicated that plant responses to biochar are indirectly related to biochar effects on soil microbial community [8,9]. Biochar enhances populations and activity in soil by modulating metabolism and growth of soil microorganisms [10,11]. AM fungi provide their host plants with mineral nutrients and receive photosynthetically derived carbohydrates in return [12]. Biochar, especially from wood materials, typically have a large surface area due to porous nature and Cation Exchange Capacity (CEC). Therefore, its addition to soils also increases the CEC of the soil [13]. Higher CEC means more ions will be adsorbed this will prevent leaching of nutrients [14]. However, these nutrients may not be accessible by plants, as most roots are unable to reach the fine porous structure of the biochar due to their large size [15]. On the other hand, AM fungal hyphae being much finer in diameter can easily re-capture some of the adsorbed nutrients and transfer them to their host plants [16]. A combined management of AM fungi and biochar may lead to efficient fertil-





GLOBAL LIFESTYLE DISEASES: LESSONS FOR THE FUTURE

Health Science

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ABSTRACT

Lifestyle illnesses are a major public health concern in the modern world. The way a person lives has an effect on how fit they are. Smoking, unstable diets and weight loss plans, physical inactivity, and alcohol use are four variable lifestyle behaviours that are linked to the development of noncommunicable diseases (NCDs), which tend to last a long time and are the result of the combination of genetic, physiological, behavioural, and environmental factors. Diabetes, most cancers, cardiovascular infection, blood stress/excessive blood strain, and so on are only a few examples. According to several study findings, death from NCDs disproportionately affects the poorest people worldwide as well as low- and middle-income countries. To minimise the effect of way of life ailments on individuals and society, the author attempted to broaden a holistic approach that encompasses all sectors, which include health, finance, training, planning, and others. This review's major focus is on the growing burden of noncommunicable illnesses/lifestyle diseases in emerging nations. The other issues include various risk factors, correct diagnosis, screening, and treatment of these diseases, as well as giving comfort care to those who require it. The author right here believes that standard encouraging wholesome behaviours in the population ought to make a contribution to decreasing the excessive burden of life style diseases.

KEYWORDS

Noncommunicable, Diseases, Lifestyle Behaviour, Risk Factor, Treatment

INTRODUCTION

In the past, communicable diseases—also known as infectious and parasitic diseases—were the primary causes of mortality. However, noncommunicable diseases (NCDs) have surpassed them as the leading cause of mortality. Typhoid and cholera are two infectious illnesses that no longer receive much attention since advances in sanitation, housing, and medication have made us more resistant to them. However, today's culture constantly brings up diabetes, hypertension (high blood pressure), obesity, and heart disease. NCDs have superseded them in recent decades as the primary cause of mortality. It is essential to comprehend how these issues are raised. There are some disorders that can develop even while the body is healthy. We are to blame for this due to our poor lifestyle choices. This might be due to changes in food habits and lifestyle choices throughout time, which have influenced people's illness patterns. NCDs are hence frequently referred to as lifestyle illnesses. As a result of economic development and globalisation, the prevalence of lifestyle illnesses has grown internationally. The main purpose of this review article is to enlighten and educate individuals on the present condition of lifestyle diseases in order to help them live a healthy life in the future.

What are Lifestyle diseases

A person's lifestyle, which includes their behaviours, practises, and habits, has a significant impact on whether or not they develop a lifestyle disease. A person's regular activities are mostly to blame for lifestyle ailments. Distracting individuals from physical activity and promoting sedentary behaviour can lead to a number of health issues, including chronic noncommunicable illnesses with potentially fatal consequences. The phrase "lifestyle illnesses" is widely used to characterise NCDs, including cardiovascular disease (CVD), stroke, diabetes, and some types of cancer, because lifestyle decisions have a considerable influence on these conditions. Furthermore, these problems account for 53% of all deaths (Rahimi Foroushani et al., 2014). It may be described scientifically as a set of consistent behaviours that are unique to an individual and determine how they live. These behaviours include activities, manners, behaviours, coping mechanisms, motivation, and mental processes. Every person, family, and community has a lifestyle that they utilise to deal with their daily physical, psychological, social, environmental, and economic circumstances. Changes in lifestyle that affect actions or exposures can assist to delay or stop the onset of the disease. Life styles are shaped by a variety of factors, including childhood effects, personality makeup, and cultural, physical, economic, and political influences. According to studies undertaken by the World Health Organization (WHO), lifestyle and health behaviours account for roughly 60% of Quality of Life. They have a complicated origin and are noninfectious/noncontagious in nature. NCDs are chronic diseases that last for a long time. While some NCDs advance slowly or produce chronic symptoms that need long-term care and control, others advance quickly. They

affect both men and women, but children are also at risk. People may look to be healthy, but they are nonetheless suffering from these illnesses. Even if people appear to be in good health, they are still suffering from chronic ailments. NCDs harm person throughout their productive years of life, which is one of the most severe problems.

Different types of Lifestyle diseases

Researchers have noted that the wellness-oriented lifestyle is at the heart of the health-conscious lifestyle and that people's conduct affects their health. (Budreviciute et al., 2020) A biological machine's body systems are collections of organs that collaborate to create and sustain life. The primary human physiological functions are breathing, digestion, gas exchange, blood circulation, movement, and the coordination and control of bodily activities. All of these are managed in a way that keeps them functioning as living one. Lifestyle diseases are conditions that emerge gradually as a result of individual decisions and genes rather than being passed from one person to another.

A person's lifestyle has a substantial impact on their health, including their physical, emotional, and social well-being. Arthritis, asthma, Alzheimer's disease, atherosclerosis, cancer, chronic liver disease, liver cirrhosis, heart disease, renal failure, type 2 diabetes, depression, obesity, stroke, and metabolic syndromes are all common lifestyle diseases. The co-existence of two or more serious diseases with a lifestyle condition can result in severe consequences that necessitate hospitalisation, skilled care, and surgery. Later challenges that are too severe, such as cardiac arrest, falls, or strokes, may cause death. The table 1 lists a number of key worrying lifestyle diseases to be aware of.

Major Causes And Risk Factors

A risk factor is a condition or behaviour that increases the probability of getting a certain disease. Because habits that eventually result in lifestyle diseases can begin while we are very young, it is crucial to understand the elements that contribute to these conditions. The great majority of lifestyle diseases have

Table 1. details of some alarming lifestyle diseases

Disease Name	Description	Controllable Risk factors (Which can be avoid in lifestyle)
1. Cardiovascular Diseases	Disorder of heart and blood vessels mainly, ischemic attack, stroke, cardiomyopathies, atherosclerosis	Unhealthy diet, Physical inactivity, Alcohol use, Stress
2. Endocrine system	Type 2 Diabetes, Metabolic syndrome, Osteoporosis	Unhealthy diet, Physical inactivity, Alcohol use, Vitamin D/Ca deficiency

**Innovations for future ease: Synthetic Biology**Medhavi Sadashan<sup>1\*</sup> & Sumit Sharan<sup>2</sup><sup>1</sup> Jagat Narain Lal College, Khagaul, Patliputra University, Patna, Bihar, India<sup>2</sup> Department of Community Medicine, Katihar Medical College, Katihar, Bihar, India**Abstract:**

Engineering principles are utilised to construct new biological parts and systems as well as to remodel already existing systems found in nature so that living systems can survive more readily in the future. Synthetic biology is concerned with living systems and animals. This mini review concentrates on taking into account biological breakthroughs that leverage engineering technology to make our lives easier.

**Text:**

Innovation is the process of effectively putting a novel concept into practise and producing benefits for all people. A convergence of biological scientific advancements with the rapid growth of computing, automation, and artificial intelligence is igniting a new wave of innovation. This Bio Revolution has the potential to have a tremendous influence on economies and our daily lives, ranging from health and agriculture to consumer products, energy, and materials. Natural cells developed from non-living compounds over time to become referred to as "alive." Consequently, creating a live system from non-living components is crucial to comprehending the genesis of life. The phrase "synthetic biology" typically refers to areas of study within the life sciences that are motivated by the synthesis of biological system components or the development of biological system models.<sup>1</sup> Synthetic biology refers to a set of biotechnology concepts, techniques, and instruments that enable the modification or production of biological entities. Thomas Knight is a computer science pioneer and the godfather of synthetic biology.<sup>2</sup> Wacław Szybalski coined the term "synthetic biology" in 1974 when the idea of making DNA in a lab was first explored.<sup>3</sup>

Genetic components and metabolic pathway design have been employed in synthetic biology to create organisms that can synthesise significant compounds, such as antibiotic and polymer precursors.<sup>4</sup> With applications in food and feed, industrial chemicals, biofuels, and health and well-being, synthetic biology is now firmly on the global agenda as a technology that has the potential to transform our interactions with the living world. Synthetic biologists strive to create biological creatures that adhere to rational design principles. Two subfields make up the expanding study of synthetic biology: i) to replicate emergent characteristics from natural biology and build artificial life, one employs unnatural molecules and ii) looks for interchangeable components from natural biology to put together into systems that behave in an unnatural way.<sup>4</sup>

Synthetic biology, with its emphasis on model-driven biology, also incorporates cyber-physical systems. For example, the production of custom DNA molecules involves a physical process that is guided by many layers of software.<sup>5</sup> Researchers all across the world are using synthetic biology in its applied form - engineering biology - to create new goods, services, and technologies that provide real and significant advantages. Nonetheless, synthetic biologists have investigated additional techniques.

RESEARCH ARTICLE

# Determinants for progression from asymptomatic infection to symptomatic visceral leishmaniasis: A cohort study

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## Abstract

### Background

Asymptomatic *Leishmania donovani* infections outnumber clinical presentations, however the predictors for development of active disease are not well known. We aimed to identify serological, immunological and genetic markers for progression from *L. donovani* infection to clinical Visceral Leishmaniasis (VL).


### Methods

We enrolled all residents >2 years of age in 27 VL endemic villages in Bihar (India). Blood samples collected on filter paper on two occasions 6–12 months apart, were tested for antibodies against *L. donovani* with rK39-ELISA and DAT. Sero converters, (negative for both tests in the first round but positive on either of the two during the second round) and controls (negative on both tests on both occasions) were followed for three years. At the start of follow-up venous blood was collected for the following tests: DAT, rK39-ELISA, Quantiferon assay, SNP/HLA genotyping and *L. donovani* specific quantitative PCR.

### Results

Among 1,606 subjects enrolled, 17 (8/476 seroconverters and 9/1,130 controls) developed VL (OR 3.1; 95% CI 1.1–8.3). High DAT and rK39 ELISA antibody titers as well as positive qPCR were strongly and significantly associated with progression from seroconversion to

# HLA-DR Class II expression on myeloid and lymphoid cells in relation to HLA-DRB1 as a genetic risk factor for visceral leishmaniasis

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[Correction added on 29 November 2018, after first online publication: The fifth author's name Siddharth Sankar Singh was corrected to Siddharth Sankar Singh.]

## Introduction

Visceral leishmaniasis (VL) is caused by *Leishmania donovani* or *Leishmania infantum chagasi*, which are obligate intracellular parasites of myeloid cells. VL is characterized by fever, hepatosplenomegaly and hypergammaglobinemia, and is fatal in susceptible individuals if left

## Summary

Genetic variation at HLA-DRB1 is a risk factor for visceral leishmaniasis (VL) caused by *Leishmania donovani*. The single nucleotide polymorphism rs9271252 upstream of the *DRB1* gene provides a perfect tag for protective versus risk HLA-DRB1 four-digit alleles. In addition to the traditional role of the membrane-distal region of HLA class II molecules in antigen presentation and CD4 T-cell activation, the membrane-proximal region mediates 'non-traditional' multi-functional activation, differentiation, or death signals, including in DR-expressing T cells. To understand how HLA-DR contributes to disease pathogenesis, we examined expression at the protein level in circulating myeloid (CD14<sup>+</sup>, CD16<sup>+</sup>) and lymphoid (CD4<sup>+</sup>, CD8<sup>+</sup>, CD19<sup>+</sup>) cells of VL patients (pre- and post-treatment) compared with endemic healthy controls (EHC). Although DR expression is reduced in circulating myeloid cells in active disease relative to EHC and post-treatment groups, expression is enhanced on CD4<sup>+</sup> DR<sup>+</sup> and CD8<sup>+</sup> DR<sup>+</sup> T cells consistent with T-cell activation. Cells of all myeloid and lymphoid populations from active cases were refractory to stimulation of DR expression with interferon- $\gamma$  (IFN- $\gamma$ ). In contrast, all populations except CD19<sup>+</sup> B cells from healthy blood bank controls showed enhanced DR expression following IFN- $\gamma$  stimulation. The rs9271252 genotype did not impact significantly on IFN- $\gamma$ -activated DR expression in myeloid, B or CD8<sup>+</sup> T cells, but CD4<sup>+</sup> T cells from healthy individuals homozygous for the risk allele were particularly refractory to activated DR expression. Further analysis of DR expression on subsets of CD4<sup>+</sup> T cells regulating VL disease could uncover additional ways in which pleiotropy at HLA *DRB1* contributes to disease pathogenesis.

**Keywords:** HLA-DR; lymphoid lineage; MHC Class II expression; myeloid lineage; visceral leishmaniasis.

untreated. However, only about 10% of people infected with these parasites proceed to clinical VL. Familial clustering<sup>1</sup> and high sibling risk ratios<sup>2</sup> suggested that host genetic factors were important in determining these differences in the outcome of infection with *Leishmania* species causing VL disease. In a genome-wide association study,<sup>3</sup> we demonstrated that the class II gene region

Abbreviations: ANOVA, analysis of variance; CIITA, Class II transactivator; EHC, endemic healthy controls; gMFI, geometric mean fluorescence intensities; HC, healthy control; IFN- $\gamma$ , interferon- $\gamma$ ; IL-10, interleukin-10; SNP, single nucleotide polymorphism; Th1, T helper 1; Th2, T helper 2; VL, visceral leishmaniasis

# Diagnosis of Visceral Leishmaniasis: Review approach on development of different techniques from invasive to noninvasive nature after more than three decades of research.

Medhavi Sudarshan and Sumit Sharan

## Abstract:

For the efficient management of infectious disease, in the present scenario, rapid, sensitive, specific and confirmatory identification of the pathogen is very important. Accurate diagnostic test plays a key role in clinician trust and patient management. Visceral Leishmaniasis (VL) is a neglected tropical infectious disease. Poor access to diagnosis stymies control of VL. In light of the study published regarding the rapid development of Leishmania detection technology and their application in VL diagnosis, in this review, the author discusses critical issues in the development of diagnostic method as well as promises and challenges for validation & transition of new innovations.

**Key words:** VL, Pathogen, Sensitive, Specific, Diagnosis

## Introduction

Diagnostic testing is traditionally considered as a tool to rule out a condition or infection when the clinical presentation in a patient is non-specific [1]. Diagnostic tools "of sufficient sensitivity and specificity to detect levels of infection that can lead to transmission" were identified as one of the essential requirements for disease elimination and eradication [2]. Visceral Leishmaniasis (VL) is a vector-borne disease caused by the *Leishmania donovani* complex, which includes: *L. donovani* and *L. infantum*. This infectious disease is also referred in the category of Neglected Tropical infectious disease. WHO defines the case of Visceral Leishmaniasis as "a person showing clinical signs (mainly prolonged irregular fever, splenomegaly and weight loss) with serological and/or parasitological confirmation". These clinical features can easily be mistaken for other common febrile illness such as malaria, enteric fever, tuberculosis, etc. If left untreated, it is almost always fatal ([www.who.int/tdr](http://www.who.int/tdr)).

[3]. In this period because of multiplication of complications patient not only suffers but also continues to spread the disease. Since humans are the only reservoir for *L. donovani* in the Indian subcontinent, control of VL programme require early case detection and further treatment. Clinical diagnosis already rely heavily on different techniques for patient disease classification, management and informing treatment & care pathways. The estimated annual global incidence of VL is 200,000-400,000 and >90% of these cases occur in India, Bangladesh, Sudan, South Sudan, Ethiopia and Brazil [4]. The visceral leishmaniasis (commonly called 'kala azar') in the Indian subcontinent has been endemic for many decades of the estimated mortality is 50,000-200,000 per year [5]. From 1987 through 2011, a total of 6,70,897 VL cases were reported officially from Bihar only. Patient management, screening of asymptomatic infections and epidemiological studies are some of the areas where diagnostic tests play a major role. Some time rare presentation of active VL also comes [6, 7]. Evaluating a diagnostic test is particularly challenging when there is no reference gold standard, which is easy to perform. Therefore, at present scenario VL diagnosis remains a challenge. It is essential that the diagnosis should be sensitive as well as specific as much as possible. To be useful, diagnostic methods must be accurate, simple and affordable for the population for which they are intended. Researches are going on in this aspect since decades. Recent developments in new diagnostic tools, however, have opened new avenues for a vast improvement in parasite detection. Recent technological developments have led to the proliferation of new, rapid diagnostic tests that hold promise

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The mean period from the onset of the disease symptoms to diagnosis (mean diagnostic lag period) is  $7.7 \pm 5.96$  months



## IMPACT OF COVID-19 PANDEMIC ON CHILDREN'S PSYCHOLOGICAL WELL BEING: A CASE REPORT

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This is a case report of 9 years old male, studying in class 5, from urban background had problem of spending more time on mobile game, watching T.V., not attending online class, not doing homework and has become very irritable, not obeying parents. The Coronavirus disease (COVID-19) pandemic is highly communicable disease. To control the spread of this disease government implemented nationwide containment measures or lockdown. Due to lockdown, many children had no physical access to friends, peers, schoolmates and relatives and these impact children adversely, making them easily bored, angry, frustrated, stressed and anxious. Here we report a case of a child who is very much psychologically affected by the measures of lockdown. In this case, by using a psychological test, Children's Self-Report and Projective Inventory (CSRPI), we see the impact of COVID 19 lockdown affected almost every aspect of this child like his social, education, physical health, mental health, daily routine and engagement in video games.

**Key words:** Coronavirus Pandemic (COVID-19), Lockdown, Psychological Health, CSRPI

Coronavirus or COVID-19 pandemic, which broke out at the beginning of December 2019 in the Wuhan city of China has directly and indirectly affected each and every sphere of life across the world. This, being a new viral disease affecting humans for the first time, vaccines were not available for a long time. Thus, the emphasis is on taking extensive precautions such as extensive hygiene protocol (e.g., regularly washing of hands, avoidance of face-to-face interaction etc.), social distancing, and wearing of masks, closing workplace and quarantine to control the spread of this highly communicable disease (Hleem et al., 2020; Amin et al., 2020; Shen et al., 2020; Singh et

al., 2020). To combat the spread of COVID-19, the Indian government implemented nationwide containment measures or lockdown and self-isolation policies (Amin et al., 2020). In the Indian context, "lockdown" refers to individuals staying at home while completely restricting the movement of the population inside and outside of specific areas except for essential activities (health visits, purchasing for essential items, and providing essential work) (Lippi et al. 2020). Peoples' lives have been disrupted and negatively affected by COVID-19-related suffering and lockdowns at community and household level (Haleem et al., 2020).

The Coronavirus disease (COVID-

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# Living with COVID 19 : A Psychological Approach

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## ABSTRACT

Corona virus disease 2019 (COVID-19) is an infectious disease. WHO declared COVID 19 outbreak a global Pandemic. COVID 19 induced Lockdown caused temporary closure of everything except grocery shop, medical shop and hospitals. Lockdown is a big shock for everyone. Great number of people has lost their employment. This pandemic and Lockdown have forced entire human being to live in new normal world which is full of restriction, stress and anxiety. People go outside in Mask and with sanitizer. Students are attending their online classes from their home. Doctors are giving tele-consultation. Business is taking form of e commerce. In COVID 19 new normal people are adopting naturopathy for treating minor health problems. Stress affects not only physical health but also mental health. Psychiatric problems like Coronaphobia, Depression, Anxiety, Hypochondriasis, insomnia, panic attack, Screen and game addiction etc. are increasing during COVID 19 period. Masses are adopting Yoga, Meditation, relaxation, Cognitive restructuring, activity scheduling and AYUSH Guidelines to keep themselves fit.

**Key word:** *COVID 19, Lockdown, Psychiatric problem, Cognitive restructuring and AYUSH.*

### Introduction:

Corona virus disease 2019 (COVID-19) is an infectious disease caused by Severe Acute Respiratory Syndrome Corona virus 2 (SARS-CoV-2). COVID 19 was first reported in Wuhan, China. China stopped its spread by using Lockdown in Wuhan. Very soon it covered many countries. On March 11, 2020, WHO declared the novel Corona virus (COVID-19) outbreak a global pandemic. In india, first case of COVID 19 was reported on 27th January, 2020, at Thrissur district of Kerala, the patient was a student studying in Wuhan University, China and returned to India. Common sign and symptoms of COVID 19 are fever, Cough, tiredness, shortness of breath or difficulties in breathing, sore throat, loss of taste and smell. It is highly infectious disease. Though we have

developed its vaccination, but till now we are without its treatment. We are helpless but not hopeless. Helpless because we are without its medicine. We are hopeful because globally scientists are working hard to develop its medicine. To stop COVID 19 Spread, WHO has proposed certain measures like, such as maintaining physical distancing, wearing a face mask, keeping rooms well ventilated, avoiding crowds, cleaning your hands, and coughing into a bent elbow or tissue. One can get infected, if he / she come into contact with infected person. It spreads primarily from person to person through small droplets that come out from nose or mouth of an infected person, when he or she coughs, sneezes, or speaks. These droplets are relatively heavier, so does not travel far and quickly sink to the ground. People can catch COVID-19 if they breathe in these droplets



from a person infected with the virus. This is why it is important to stay at least 1 meter away from others. These droplets can land on objects and surfaces around the person such as tables, doorknobs and handrails. People can become infected by touching these objects or surfaces, then touching their eyes, nose or mouth. So it's important to practice respiratory etiquette for example, by coughing into a flexed elbow or put cloth over your mouth and nose when one coughs or sneezes. People should wash their hands regularly with soap and water or clean with alcohol-based Sanitizer. The risks of getting COVID-19 are higher in crowded and inadequately ventilated spaces where infected people spend long periods of time together in close proximity. WHO says to Avoid 3Cs – spaces that are closed, crowded or involve close contact. In its advisory WHO also says that one should seek medical attention immediately if one develops fever, cough and difficulty in breathing. WHO says that one should stay at home and self-isolate, if one develops even minor symptoms like headache, mild fever etc. Anybody can get infected with the COVID 19. But, elderly people, children below 10 and person with medical problems like diabetes, Cardio Vascular Disease, Chronic Respiratory disease and Cancer, Health Care Workers like Doctors and nurses and person with poor immune system are in high risk zone.

Indian government announced Lockdown to slow its speed. COVID 19 induced Lockdown caused temporary closure of the Industry, big business houses and all economical and commercial activities. During lockdown period Social gatherings, for example marriage ceremony or funeral rites were allowed on specific terms and condition. Limited number of persons was allowed to be present in such ceremony. Lockdown is a big shock for those who runs petty businesses and who are self

employed person like, daily laborer, small farmers, Rickshaw puller and Vendor Vala. Great number of people has lost their employment. They managed to sustain their family anyhow. School, Colleges, Coaching Institutes also remained closed. Examinations were delayed.

The Ministry of Ayurveda, Yoga, Naturopathy, Unani, Siddha, Sowa-Rigpa and Homoeopathy (abbreviated as AYUSH) AYUSH has recommended certain measures for enhancing immunity. It says drink warm water, practice Yogasana, and Pranayama and meditation and use spices like Haldi ( turmeric), Jeera (cumin), Dhaniya ( coriander) and Lahsun (garlic) in cooking. Ayurvedic immunity boosting measures are take chawanprash (10gm) in the morning, drink herbal tea or decoction (Kadha) made from Tulsi ( Basil), dalchini (Cinnamon), Kalimirch (Black Pepper), Shunthi (dry Ginger) and Munakka (Rasin).

#### **Life In New Normal World:**

Lockdown has completely changed our life. This new normal world emphasized on online activities, It focuses upon minimal contact of person. People stay at home. They do not go outside if it is not urgent/emergency. People do not visit family, friends or go to market, Park, Restaurant, School, College, office, Theater. At home, they are trying to improve their Quality of Life by doing productive work from home. Now, online classes are going on for students. Business is taking form of e commerce. One can take relish of restaurants food at home by getting home delivery from Restaurants. People go outside in Mask and with sanitizer. Mass gatherings are being avoided. Even people are celebrating festival, like Durga Puja, Chhath Puja, Holi and Id etc. with less contact with their relatives and friends. Marriages are taking place with less number of people. Death ceremonies are taking place with less number of people. Through video calling facility



brought people close to their friends and family, so no need to visit their home to see them and chat with them. Medical facility is not much available, as it was before COVID19 outbreak. Everybody is taking precaution, so that they cannot get infected with COVID 19. Doctors are hesitating to come in contact with patients at the same time patients also wants to avoid doctors contact, due to fear of catching COVID 19 infection. Doctors are giving online consultation (Tele – consultation) to their patient. Ministry of Health and family welfare, Government of India launched e Sanjivini OPD. It is National Tele-consultation Service on 16<sup>th</sup> June, 2009. Its aim was to provide telemedicine network at rural areas. This service prove beneficial during COVID Pandemic. Doctors are Prescribing medicine to the patient with minimal physical contact. Even though the job is so hazardous that doctors had to come in contact with the patient. As a consequence of which they became victim of COVID 19 infection.

People try to do their work themselves. They do not want to take help of maid, driver or other person. They clean their home, wash their cloth, press it, cooking, drive car themselves. In other word by doing all these work people keep themselves physically active and safe. People are adopting naturopathy. They are doing Yoga and meditation to keep them healthy and fit at home. They opt for home remedies like Dadi ma ke Nuskhe, to cure minor problems, like taking Ajwain for digestion, To improve Immune System Citric food, Kadha, Tulsi, Haldi vala Dhudh etc. are consumed. All educational Institutions are closed. Students are attending their online classes from their home. Students are missing their school activities.

### **Psychological Impact Of Covid 19:**

COVID 19 Pandemic brought not only health emergencies but it also affected our economical infrastructure, social life, and mental health. Due to all these problems people are living in stress. High stress levels affect immunity, says Dr Prabha S Chandra, Psychiatrist at Nimhans . Person with lower immunity is in high risk zone. Three people, who were tested positive for COVID 19 in Tamilnadu, India, ended their life (The times of India, 29 May, 2020). A man, who had returned from Mumbai to his native place in Karnataka was sent to quarantine, reportedly he committed suicide.

Psychologist Hans Selye has given a model of Stress. It is called General Adaptive Syndrome (GAS). It says how organism responds to stress. GAS consists of 3 stages – Alarm Stages is the first stage, in which body prepares itself for immediate action. Here arousal of Sympathetic Nervous System Occurs. Sympathetic Nervous System releases hormones that helps to prepare our body to meet threats or dangers. If stress continues, the Resistance Stage, Second Stage, begins. Our body draws on resources at an above normal rate in order to cope with the stress effectively. Continued exposure to the same stressor leads to the third stage, Exhaustion. It drains the body of its resources. During this stage our capacity to resist is depleted and our susceptibility to illnesses increases. In severe Cases of prolonged physical stress, the result can be death.

Large numbers of People are suffering from mental Disorders which include Coronaphobia, it is fear of contracting COVID 19. Due to COVID 19 Pandemic many people is fearful, anxious and worried. They are under stress. They are not able to do their work due to fear of getting COVID 19 infection. People don't want to go outside to purchase food, medicine or other essential things due to fear of getting infected. They are having errors in

thinking (thinking errors – jumping to conclusion, personalization, Catastrophic thinking, Filtering etc.). If they develop normal coughing, they may Jump to the Conclusion that they got infected with COVID 19. Some causality was reported even person even after getting 2n dose of COVID 19 vaccination. COVID suspect are running from quarantine center due to fear of catching virus. People are likely to develop mental illness like Depression, Generalized Anxiety Disorder, Panic Disorder, Hypochondriasis, Somatization, Dissociation, Obsessive Compulsive Disorder, and Insomnia.

Depression is a mood disorder. It is characterized by low mood, pessimistic view about future, helplessness, hopelessness and worthlessness, irritability, fatigue, suicidal ideation, loss of appetite and disturbed sleep. Generalized Anxiety Disorder involves excessive anxiety and worry about different kinds of topic, events or activities. Hypochondriasis involves persistent preoccupation with the possibility of having one or more serious and progressive physical disorders. Person with Panic disorder experience recurrent anxiety attack in which the person experiences intense terror. Many people are having negative thinking. They are persistently worried about their temporary unemployment, business, future. They are likely to lose their temper easily, on trivial issues. The sense of isolation and financial and medical anxiety coming along with the deadly pandemic and sinking economy have increased the frequency of terror within homes. The national lockdown has reported more than 50% rise in domestic violence. Recent data released by the National Legal Services Authority (NALSA) suggest that the nationwide lockdown has led to a rapid increase in cases of domestic violence.

People spend lots of times on social networking sites or internet. Students are also getting their classes online. All these things have increased

our dependency on mobile and internet. Now many people are having mobile addiction.

Not only adults but children are also showing maladaptive behaviors. They do not want to go to bed on time and do not want to get up early in the morning. As there is no school. Since they are not allowed to go outside so they spends lots of time on mobile, playing game or watching videos and watching television. They spend time in quarreling with their sibling. In spite of all these negative aspects some positive things are also taking place like it has given us opportunity to spend times with family members. People are getting time to follow their hobbies, like – reading, cooking, dancing, painting, singing etc. Working parents are able to give time to their kids. There are several Psychological techniques which can be helpful in reducing stress like Activity Scheduling (maintaining daily routine activities and keeping oneself busy), Distraction techniques, Relaxation techniques, Deep breathing exercises, Replacing negative thoughts with positive thoughts and by developing and following hobbies and minimizing watching, reading and listening too much COVID 19 related news. One should not be preoccupied with watching COVID 19 related news all the time because it causes unnecessary tension. To decrease domestic violence we should do anger management, Cognitive restructuring. By following all these measures we can stay mentally and physically fit with COVID 19.

### **Conclusion:**

Due to COVID 19 Pandemic many people is fearful, anxious and worried. They are under stress. They are not able to do their work due to fear of getting COVID 19 infection. Due to COVID 19 pandemic many psychological problems are rising including rise in domestic violence. Many people have developed mobile and game addiction. This COVID-19 pandemic

and Lockdown have forced entire human being living in a world that is more stressful and full of anxiety. Psychological approaches to live with COVID 19 will reduce our stress, anxiety and domestic violence. Psychological approach will improve our mental health and Psychological well being.

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# Postpartum Depression Common But Undiagnosed and Untreated Mental Disorder

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## ABSTRACT

Postpartum depression is a condition that occurs in mother after childbirth. It is a unique and often unrecognized disorder, yet its impact can be devastating. This phenomenon affects women universally in countries around the world, making it the most common complication following childbirth, with 10%–15% of women experiencing it. If left untreated, maternal depression can lead to serious health issues for the mother, the infant, and the family as a whole. Moreover, when depression persists in mothers, it puts their children at a higher risk for behavioral problems and later psychopathology, including anxiety, disruptive, and affective disorders. It can be treated through a combination of psychological interventions such as cognitive behavior therapy, interpersonal therapy, and family therapy, along with medical interventions involving antidepressants. However, despite the availability of treatments, postpartum depression is often subject to stigma, similarly to other mental disorders. Unfortunately, this stigma, whether with or without support from family members and health professionals, can deter women from seeking help for their postpartum depression.

**Keywords:** Postpartum depression, Cognitive behaviour therapy, Interpersonal therapy, Supportive therapy, Family therapy, antidepressant and stigma

## Introduction:

Postpartum depression, also known as postnatal depression, is a depressive disorder that may affect mothers following childbirth. This condition is observed universally, impacting women in countries around the globe. The prevalence of this distressing mental disorder ranges from 5% to 60.8% worldwide (Klainin & Arthur, 2009).

Postpartum depression is characterized as non-psychotic depressive episodes, marked by symptoms like loss of interest, insomnia, and decreased energy experienced by mothers within 4 to 6 weeks after delivery, as defined by the World Health Organization (WHO, 2001). The symptoms of postpartum depression, as described by the World Health Organization in 2003, encompass feelings of anxiety,

hopelessness, decreased appetite, and difficulty concentrating, reduced interest in the baby or life in general, and altered sleep patterns (Segre & Davis, 2013).

In the immediate postpartum period, approximately 50-80% of women experience various mood disturbances, such as anxiety, heightened emotional sensitivity, feelings of loneliness, fear of unknown, and/or guilt. As time progresses and the mother forms a strong bond with her new-born baby, these emotions usually decrease. However, a notable subset of women, comprising 10-15%, goes on to develop severe symptoms of depression or anxiety, which is called postpartum depression (Patel et al, 2015)

Postpartum psychiatric disorders can be categorized into three main types: postpartum blues,

## IMPACT OF COVID-19 PANDEMIC ON CHILDREN'S PSYCHOLOGICAL WELL BEING: A CASE REPORT

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**Archana Bharti**

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This is a case report of 9 years old male, studying in class 5, from urban background had problem of spending more time on mobile game, watching T.V., not attending online class, not doing homework and has become very irritable, not obeying parents. The Coronavirus disease (COVID-19) pandemic is highly communicable disease. To control the spread of this disease government implemented nationwide containment measures or lockdown. Due to lockdown, many children had no physical access to friends, peers, schoolmates and relatives and these impact children adversely, making them easily bored, angry, frustrated, stressed and anxious. Here we report a case of a child who is very much psychologically affected by the measures of lockdown. In this case, by using a psychological test, Children's Self-Report and Projective Inventory (CSRPI), we see the impact of COVID 19 lockdown affected almost every aspect of this child like his social, education, physical health, mental health, daily routine and engagement in video games.

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thinking (thinking errors – jumping to conclusion, personalization, Catastrophic thinking, Filtering etc.). If they develop normal coughing, they may Jump to the Conclusion that they got infected with COVID 19. Some causality was reported even person even after getting 2<sup>nd</sup> dose of COVID 19 vaccination. COVID suspect are running from quarantine center due to fear of catching virus. People are likely to develop mental illness like Depression, Generalized Anxiety Disorder, Panic Disorder, Hypochondriasis, Somatization, Dissociation, Obsessive Compulsive Disorder, and Insomnia.

Depression is a mood disorder. It is characterized by low mood, pessimistic view about future, helplessness, hopelessness and worthlessness, irritability, fatigue, suicidal ideation, loss of appetite and disturbed sleep. Generalized Anxiety Disorder involves excessive anxiety and worry about different kinds of topic, events or activities. Hypochondriasis involves persistent preoccupation with the possibility of having one or more serious and progressive physical disorders. Person with Panic disorder experience recurrent anxiety attack in which the person experiences intense terror. Many people are having negative thinking. They are persistently worried about their temporary unemployment, business, future. They are likely to lose their temper easily, on trivial issues. The sense of isolation and financial and medical anxiety coming along with the deadly pandemic and sinking economy have increased the frequency of terror within homes. The national lockdown has reported more than 50% rise in domestic violence. Recent data released by the National Legal Services Authority (NALSA) suggest that the nationwide lockdown has led to a rapid increase in cases of domestic violence.

People spend lots of times on social networking sites or internet. Students are also getting their classes online. All these things have increased

our dependency on mobile and internet. Now many people are having mobile addiction.

Not only adults but children are also showing maladaptive behaviors. They do not want to go to bed on time and do not want to get up early in the morning. As there is no school. Since they are not allowed to go outside so they spends lots of time on mobile, playing game or watching videos and watching television. They spend time in quarreling with their sibling. In spite of all these negative aspects some positive things are also taking place like it has given us opportunity to spend times with family members. People are getting time to follow their hobbies, like – reading, cooking, dancing, painting, singing etc. Working parents are able to give time to their kids. There are several Psychological techniques which can be helpful in reducing stress like Activity Scheduling (maintaining daily routine activities and keeping oneself busy), Distraction techniques, Relaxation techniques, Deep breathing exercises, Replacing negative thoughts with positive thoughts and by developing and following hobbies and minimizing watching, reading and listening too much COVID 19 related news. One should not be preoccupied with watching COVID 19 related news all the time because it causes unnecessary tension. To decrease domestic violence we should do anger management, Cognitive restructuring. By following all these measures we can stay mentally and physically fit with COVID 19.

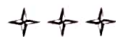
### **Conclusion:**

Due to COVID 19 Pandemic many people is fearful, anxious and worried. They are under stress. They are not able to do their work due to fear of getting COVID 19 infection. Due to COVID 19 pandemic many psychological problems are rising including rise in domestic violence. Many people have developed mobile and game addiction. This COVID-19 pandemic

and Lockdown have forced entire human being living in a world that is more stressful and full of anxiety. Psychological approaches to live with COVID 19 will reduce our stress, anxiety and domestic violence. Psychological approach will improve our mental health and Psychological well being.

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# Postpartum Depression Common But Undiagnosed and Untreated Mental Disorder

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## *ABSTRACT*

Postpartum depression is a condition that occurs in mother after childbirth. It is a unique and often unrecognized disorder, yet its impact can be devastating. This phenomenon affects women universally in countries around the world, making it the most common complication following childbirth, with 10%–15% of women experiencing it. If left untreated, maternal depression can lead to serious health issues for the mother, the infant, and the family as a whole. Moreover, when depression persists in mothers, it puts their children at a higher risk for behavioral problems and later psychopathology, including anxiety, disruptive, and affective disorders. It can be treated through a combination of psychological interventions such as cognitive behavior therapy, interpersonal therapy, and family therapy, along with medical interventions involving antidepressants. However, despite the availability of treatments, postpartum depression is often subject to stigma, similarly to other mental disorders. Unfortunately, this stigma, whether with or without support from family members and health professionals, can deter women from seeking help for their postpartum depression.

**Keywords:** Postpartum depression, Cognitive behaviour therapy, Interpersonal therapy, Supportive therapy, Family therapy, antidepressant and stigma

## **Introduction:**

Postpartum depression, also known as postnatal depression, is a depressive disorder that may affect mothers following childbirth. This condition is observed universally, impacting women in countries around the globe. The prevalence of this distressing mental disorder ranges from 5% to 60.8% worldwide (Klainin & Arthur, 2009).

Postpartum depression is characterized as non-psychotic depressive episodes, marked by symptoms like loss of interest, insomnia, and decreased energy experienced by mothers within 4 to 6 weeks after delivery, as defined by the World Health Organization (WHO, 2001). The symptoms of postpartum depression, as described by the World Health Organization in 2003, encompass feelings of anxiety,

hopelessness, decreased appetite, and difficulty concentrating, reduced interest in the baby or life in general, and altered sleep patterns (Segre & Davis, 2013).

In the immediate postpartum period, approximately 50-80% of women experience various mood disturbances, such as anxiety, heightened emotional sensitivity, feelings of loneliness, fear of unknown, and/or guilt. As time progress and the mother forms a strong bond with her new-born baby, these emotions usually decrease. however, a notable subset of women, comprising 10-15%, goes on to develop severe symptoms of depression or anxiety, which is called postpartum depression (Patel et al, 2015)

Postpartum psychiatric disorders can be categorized into three main types: postpartum blues,

postpartum psychosis, and postpartum depression. The "postpartum blues" or "baby blues" is a short-term mood disturbance that affects up to 75% of new mothers during the 10 days following childbirth. It is characterized by symptoms like crying, irritability, fatigue, anxiety, and emotional lability. Generally, these symptoms are mild and self-limited, and they do not involve a complete loss of pleasure or interest, persistent low mood, or thoughts of suicide (Beck, 2006).

On the opposite end of the spectrum, postpartum psychosis is a psychiatric emergency that demands immediate intervention. It is marked by a rapid onset of severe mood swings, fluctuating consciousness, delusions, hallucinations, or disorganized behaviors, and a relatively high incidence of thoughts of suicide or harm towards the infant (Sit et al., 2006). The Edinburgh Postnatal Depression Rating Scale is a commonly used tool for screening depression specifically related to the postpartum period. It aids in identifying and evaluating postpartum depression symptoms in new mothers.

#### **Epidemiology:**

Postpartum depression affects approximately 10-15% of all mothers in western societies. However, recent epidemiological studies have shown varying prevalence rates for postpartum depression across different regions: 15.8% in Arab women, 16% in Zimbabwean women, 34.7% in South African women, 11.2% in Chinese women, 17% in Japanese women, and 23% in Goan women in India (Thomas et al., 2018). In India, the prevalence of postpartum depression ranges from 11% to 16% (Hegde et al., 2012).

Postpartum blues, with an incidence of 300 750 per 1000 mothers globally, typically resolve within a few days to a week, causing few negative effects and usually only requiring reassurance. On the other hand, postpartum psychosis, with a global prevalence ranging from 0.89 to 2.6 per 1000 births, is a severe disorder that manifests within four weeks postpartum and necessitates hospitalization. Postpartum depression can begin shortly after childbirth or continue from antenatal depression, and it requires appropriate treatment. The worldwide prevalence of postpartum depression has been estimated at 100 150 per 1000

births. Despite its significance as a health issue for many women, postpartum depression often goes undiagnosed and untreated (Upadhyay et al., 2017).

#### **Postpartum Depression And Stigma:**

Postpartum depression remains associated with significant stigma, which can complicate efforts to accurately determine its true prevalence. This stigma surrounding mental health, regardless of whether there is support from family members and health professionals, often acts as a deterrent for women seeking help for their postpartum depression. However, for those who do seek and receive medical assistance, some find the diagnosis beneficial and become advocates for raising awareness of postpartum depression within the health professional community (Halbreich & Karkun, 2006).

#### **Etiology Of Postpartum Depression:**

The development of postpartum disorders does not have a clear etiology and may arise from a combination of factors. Several factors are associated with an increased risk of postpartum depression. Genetic susceptibility and hormonal changes plays a role, influenced by various risk factors such as unplanned pregnancy, single parenthood, financial difficulties, stressful life events, child care-related stress, and having a congenitally malformed infant (Chandra, 2009). Hormones like estrogen, progesterone, thyroid hormone, testosterone, endorphins, and cortisol have been associated with this disorder. Additionally, the use of synthetic oxytocin, a drug used to induce labor, has been associated with increased rates of postpartum depression and anxiety (Kroll-Desrosiers et al., 2017).

Personal and family history of depression and the stress of caring for a new baby are also considered contributors to postpartum depression (Schiller et al., 2015; Kim et al., 2014). A history of depression and anxiety, along with reduced social support (emotional, financial, intelligence support, and empathy), experiencing the illness or death of a baby, substance abuse by the husband, complications during the current pregnancy, giving birth to a female baby, and lack of support from the husband are among the significant environmental factors linked to the onset of depression and anxiety disorders (Upadhyay et al., 2017).

Other factors that contribute to postpartum depression include the mother's marital status, an unplanned/unwanted pregnancy, the undesired gender of the baby, having a poor relationship with a partner, experiencing a lack of emotional support within the family, insufficient social support, poverty, and social adversity, previous personal history of depression, prenatal depression or anxiety, childcare stress, poor physical health of the woman or the baby, and chance adverse life events (Patel et al., 2002; Beck, 2001). In a study conducted in Goa, India, depression risk after delivery was found to be higher in cases of economic deprivation, marital violence, and having a female infant (Patel et al., 2002).

#### **Effects Of Postpartum Depression:**

Untreated maternal depression has severe repercussions for the well-being of the mother, the infant, and the family system. Numerous studies have highlighted the detrimental impact of prolonged and severe postnatal depression on relationships, families, and children. Such consequences include increased depression in partners, higher rates of divorce, weakened bonding with the infant, and reduced emotional adjustment and cognitive development among children (John, 2011).

Depression significantly impairs a mother's ability to interact appropriately with her child (Logsdon et al., 2006). Depressed women often exhibit diminished responsiveness to infant cues (Murray et al., 1996) and display more negative, hostile, or disengaged parenting behaviors (Lovejoy et al., 2000). These disruptions in maternal-infant interactions have been linked to lower cognitive functioning and adverse emotional development in children. Furthermore, when mothers experience chronic depression, their children are at an elevated risk for behavioral problems (Oberlander et al., 2007) and later psychopathology, including anxiety, disruptive, and affective disorders. On the other hand, the remission of depression in mothers is associated with a reduction or remission in psychiatric diagnoses in their children (Weissman et al., 2006).

In low-income countries, maternal depression has been associated with both malnutrition and higher

rates of diarrheal illness in children (Rahman et al., 2008). The consequences of maternal depression extend to social, emotional, and cognitive developmental domains in children. Those growing up in households with depressed mothers face a heightened risk of experiencing psychiatric symptoms, both internalizing and externalizing, and are more prone to developing a wide range of psychiatric disorders, including depressive and anxiety disorders, oppositional defiant disorder, and conduct disorder (Teti & Goodman, 2008).

#### **Management Of Postpartum Depression:**

There are two main types of interventions for Postpartum Depression: psychological and medical. Medical interventions involve the use of medications such as anti-depressants, antianxiety drugs, and antipsychotic drugs if necessary. On the other hand, psychological interventions includes psycho-education, cognitive-behavioral therapy, interpersonal therapy, family therapy, and supportive therapy.

Psycho-educational interventions have been consistently effective in managing common perinatal mental disorders. These interventions focus on promoting problem-solving, coping skills, role transitions, interpersonal skills, and addressing the need for support systems. Cognitive-behavioral therapy and interpersonal therapy have shown particular success in helping individuals reframe unhelpful thinking patterns (Appleby et al., 1997).

Both individual social and psychological interventions have demonstrated equal efficacy in treating Postpartum Depression (Dennis, 2007; Pearlstein, 2009). Social interventions include individual counseling and peer support, while psychological interventions involve cognitive-behavioral therapy (CBT) and interpersonal therapy (IPT) (Fitelson et al., 2010). IPT has been particularly effective in fostering a strong bond between the mother and infant (Stuart, 2012; Smith et al., 2016). Other therapy forms, such as group therapy, home visits, counseling, and ensuring adequate sleep for the mother, may also be beneficial (Beck, 2008).

For mild to moderate cases of Postpartum Depression, psychological interventions or

antidepressants are typically used as treatment options. However, for women experiencing moderate to severe PPD, a combination of psychological and medical interventions may yield greater benefits (Langan, 2016).

In addition to traditional treatments, light aerobic exercise has shown promise in managing mild and moderate cases of Postpartum Depression (McCurdy et al., 2017; Prtchett et al., 2017). Moreover, maintaining a nutritious diet with sufficient consumption of vegetables, fruits, legumes, seafood, milk, dairy products, and olive oil has been associated with a potential 50% reduction in postpartum depression risk (Chatzi et al., 2011). Research also suggests that exercise and physical activity offer significant benefits in reducing depression symptoms comparable to medicinal effects (Dinas et al., 2011). Exercise has the added advantage of enhancing self-confidence and aiding in overcoming negative self-assessments related to depression. Furthermore, exercise can help women focus on their environment and improve problem-solving skills (Daley et al., 2007).

### Conclusion:

Postpartum depression is a unique and often underestimated disorder, yet its consequences are devastating, significantly impacting maternal mortality and morbidity, making it a critical public health concern for women and their families. This form of depression occurs after childbirth, which is a life-altering experience that can be both exciting and overwhelming for new parents. The good news is that postpartum depression is a medical condition that can be effectively treated with medication and counseling.

Raising public awareness about postpartum depression and its effects on children is of utmost importance; as such awareness could encourage more mothers to seek necessary treatment. The study reveals a high prevalence of depression among postpartum women, but unfortunately, the rate of seeking healthcare for depression remains low. To tackle this issue, it is crucial for health policymakers to incorporate mental health components into reproductive and child health programs. Moreover,

health professionals and workers must receive proper training to promptly raise awareness and provide effective treatment for postpartum depression among women.

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# वेदाञ्जली

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वर्ष-७

अंक-१४

भाग-१

जुलाई-दिसम्बर, २०२०

प्रधानसम्पादक

डॉ० रामकेश्वर तिवारी

सह सम्पादक

श्री प्रसून मिश्र

प्रकाशक

वैदिक एजुकेशनल रिसर्च सोसाइटी

वाराणसी



## गीता के संदर्भ में तनाव और कर्मयोग

डॉ० अमरिकाता कुमारी

सार : मनुष्य जब अपने जीवन का समय निर्धारित नहीं कर पाता है, तो वह अपने कर्तव्य पथ से दिगभ्रम हो जाता है। कर्म के आभाव में वह तनाव का शिकार हो जाता है। जिसे दूर करने के लिए मनुष्य को कर्म योगी बनना पड़ता है।

मुख्य बिन्दु : कर्मयोग, तनाव, शक्तिकर्म, भागवत रोमा मार्ग, मोक्ष आदि।

भूमिका : मानव जब अपने कर्म के फल के विषय में चिंतन करना आरंभ करता है, तभी तनाव का प्रादुर्भाव होता है। अपने स्वार्थ की चिंता में किया गया कर्म तनाव रुपी यूद्ध का मूल जड़ है और निस्वार्थ भाव से किया गया कर्म ही कर्म योग है।

मनुष्य सांसारिक सुख और दुखों के गाया जाल में फंसता है, तो चिंता की उत्पत्ति होती है। कोई भी कार्य आरंभ करने से पहले फल की चिंता करना, तनाव का मुख्य कारण है। भगवान श्रीकृष्ण ने भी गीता में कहा है, "कर्मण्येवाधिकारस्ते मा फलेषु कदाचन।"

मूल तत्त्व : भगवद्गीता एक सर्वश्रेष्ठ और सबसे प्राचीन मनोविज्ञान है, जिसमें युद्ध क्षेत्र में तनाव ग्रस्त तथा दूटे हुए मनोबल युक्त अर्जुन को उत्साह प्रदान कर युद्ध के लिए प्रेरित किया गया है। गीता में कर्म योग का ही उद्देश्य दिया गया है। गीता जैसे पवित्र ग्रंथ का श्रेय अर्जुन को ही जाता है, जिसने युद्ध भूमि में भगवान कृष्ण को कर्मयोग की शिक्षा अर्थात् अमृत उपदेश देने के लिए विवश किया। सम्पूर्ण गीता का उद्देश्य ही कर्मयोगी बनाना है लोक में एक कहावत प्रचलित है, "जैसा कर्म करोगे, वैसा देंगे भगवान यह है गीता का ज्ञान।"

विस्तृत वर्णन : इस संसार में दो प्रकार की जीवन पद्धति हैं पहला ज्ञानयोग और दूसरा कर्मयोग। ज्ञानयोग में मनुष्य व्यावहारिक ज्ञान तथा दर्शन द्वारा संसार का चिंतन और मनन करना चाहते हैं, अर्थात् आत्मा और परमात्मा को अभेद मानकर स्वयं को ब्रह्म से अभिन्न समझते हैं। कर्मयोग अर्थात् भक्ति योग में मनुष्य परमेश्वर को सर्वशक्तिमान संपूर्ण जगत के कर्ता और स्वामी मानकर स्वयं को प्रभु का सेवक मानकर भक्ति में लीन होकर परमात्मा से साक्षात्कार का प्रयत्न करते हैं।<sup>१</sup>

वर्ण, आश्रम, स्वभाव और परिस्थिति के अनुसार जिस मनुष्य के लिए जिन कर्मों का शास्त्र किया गया है, उन शास्त्र विहित स्वाभाविक कर्मों का न्यायपूर्वक अपना कर्तव्य मानकर उन कर्मों का फल और सिद्धि की व्यर्थ चिंता, मोह, माया से पृथक् होकर समस्त कर्म और फल भगवान को समर्पित करते हुए अपने कर्तव्य में लीन होना कर्मयोग है।<sup>२</sup>

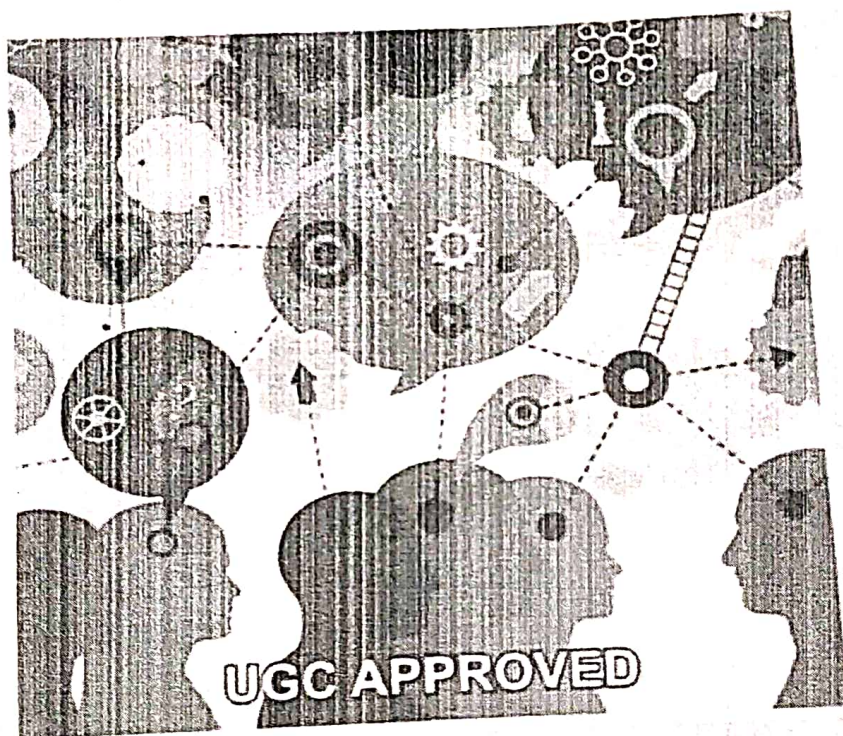
कर्मयोग की स्थिति में मनुष्य राग द्वेष और काम क्रोधादि अवगुणों से मुक्त रहता है। संपूर्ण जगत उसे भगवान् का स्वरूप प्रतीत होते लगता है। सब प्राणियों में प्रभु दिखाई देने लगता है। इस स्थिति में व्यक्ति स्वतः तनाव मुक्त हो जायेगा, जब उससे यह आभास हो जायेगा कि सर्वत्र प्रभु की सत्ता विराजमान है।<sup>३</sup>

अज्ञानता और अज्ञातभय के कारण मनुष्य जब कर्म के फल का शुभ और अशुभ की अत्यधिक चिंता करने लगता है, तब तनाव की स्थिति उत्पन्न होती है। तनाव की स्थिति में मनुष्य अकर्मण्य हो जाता है। उसमें शारीरिक और मानसिक गतिविधियाँ क्षीण हो जाती हैं। उचित-अनुचित का निर्णय शक्ति का

\*सहायक आचार्य 'संस्कृत', जगत नारायण लाल कालेज पटना, पाटलिपुत्र विश्वविद्यालय, बिहार



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## मानव जीवन में वर्ण- व्यवस्था का महत्व

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**सार-** समाज को सुनियोजित ढंग से संचालित करने के लिए इसे चार वर्गों में वर्गीकृत किया गया है। समस्त मानव-जाति का वर्गीकरण उनके शारीरिक और मानसिक क्षमताओं के अनुसार किया गया है। सभी वर्गों के लिए भिन्न भिन्न कर्म (कर्तव्य) निर्धारित किये गये हैं।

**मुख्य बिन्दु-** सृष्टि, समाज, कर्म, स्वभाव, ब्राह्मण, क्षत्रिय, वैश्य और शूद्र।

**भूमिका-** मानव जाति ब्रह्मा की सृष्टि का अनुपम और सर्वश्रेष्ठ कृति है। अन्य प्राणियों की अपेक्षा मानव की रचना अनेक धार्मिक उद्देश्यों के लिए की गयी है। मानव को जन्म से लेकर मृत्युपर्यन्त अनेक दायित्वों का निवहण करना पड़ता है। इन दायित्वों और उद्देश्यों के निर्वहण के लिए ब्रह्मा न समस्त मानव-जाति को चार भागों में विभक्त किया है। ताकि सृष्टि का संचालन सम्यक् पूर्वक हो सकें। गीता में एक प्रसंग आता है-

चातुर्वर्ण्यं मया सष्ट गुणकर्म विभागशः (1)

अर्थात् सत्त्व, रज और तमोगुण एवम् पूर्व जन्म के कर्मा के फलानुसार ब्राह्मण, क्षत्रिय, वैश्य और शूद्र ये चार विभाग किये गये हैं।

**विस्तृत वर्णन-** समाज रूपी शरीर की सुव्यवस्था के लिए 'वर्ण धर्म' मनुष्य द्वारा नहीं अपितु ईश्वर द्वारा किया गया विभाजन है। भारत के दिव्य द्रष्टा महर्षियों ने इसज्ञान ईश्वर से साक्षात् प्राप्त कर समाज का निर्माण किया।

महर्षि मनु ने कहा है-

"यथर्तुलिडान्यतवः स्वयमेवर्तुपर्यये।

स्वानि स्वान्यमिपद्यन्ते तथा कर्माणि देहिनः॥ (2)

अर्थात् जिस प्रकार ऋतुएं परिवर्तन होने पर स्वयं ही अपने-अपने चिन्हों को प्राप्त करती हैं, उसी प्रकार देहधारी अपने-अपने कर्मों को स्वयं ही प्राप्त करते हैं।

वसन्त ऋतु का प्रतीक है, आम में मंजर आना, खेतों में सरसों का मनमोह

## सूरदास के काव्य में प्रेम की परिकल्पना

डॉ सरिता सिन्हा

असिस्टेंट प्रोफेसर (हिंदी)

जगत नारायण लाल कॉलेज , खगौल ,पटना

हिंदी साहित्य का भक्तिकाल अपनी विशिष्टता, महत्ता और लोक संस्कृति के संरक्षण के कारण स्वर्णयुग की अमिधा से मंडित किया गया है। इस काल के कवियों ने अपनी कविता के माध्यम से एक नया साहित्य संसार रचते हुए भारतीय समाज व संस्कृति से जुड़कर जनमानस को सन्देश भी दिया। मध्यकालीन भक्तिकाव्य वह काव्य है जो मात्र वैराग्य , निवृत्ति अथवा परलोक की चिंता तक सीमित नहीं है बल्कि इसमें जीवन के प्रति असीम अनुराग लोकजीवन के प्रति निष्ठा तथा प्रवृत्तिमय जीवन के प्रति असीम प्रेम भी दिखाई पड़ता है।

भक्तिकाव्य में भक्ति की दो धाराएं थीं -- निर्गुण भक्तिकाव्य और सगुण भक्तिकाव्य । प्रत्येक धारा की पुनः दो-दो उपधाराएं थी। निर्गुण भक्ति काव्य ज्ञान मार्गीय काव्य व प्रेम मार्गीय काव्य तथा सगुण भक्ति काव्य रामभक्ति काव्य व कृष्णभक्ति काव्य में विभक्त था। सगुण कवियों ने राम और कृष्ण को अपने काव्य का विषय बनाकर उनके शील , शक्ति व सौंदर्य का वर्णन किया साथ-ही साथ उनकी लीलाओं व शौर्य पराक्रम के माध्यम से अपने तात्कालीन समाज के भी चित्र उकेरे थे। प्रस्तुत शोध पत्र के माध्यम से कृष्ण भक्ति काव्य के प्रणेता महाकवि "सूरदास के काव्य में प्रेम की परिकल्पना " विषय को आधार बनाकर उनके काव्य के अंतरंग व बहिरंग पक्ष को उद्घाटित करने की कोशिश है।

सूरदास प्रेम के कवि हैं। जिस प्रेम के वे गायक हैं ,उसका प्रसार मानव जीवन से लेकर प्रकृति जगत और ईश्वर तक है। उनके काव्य में मानवीय प्रेम की अपार व्यापकता और विविधता है। यही मानवीय प्रेम ईश्वरीय प्रेम या भक्ति के रूप में भी व्यक्त हुआ है। मानवीय संबंधों में प्रेम के दो व्यक्त रूप हैं -- वात्सल्य और दाम्पत्य । " भारतीय भक्ति दर्शन और काव्य में वात्सल्य के दो रूप हैं। एक में भक्त बालक बनकर भगवान से वात्सल्य स्नेह की कामना करता है और दूसरे में वह बालक रूप भगवान पर स्वयं वात्सल्य स्नेह की वर्षा करता है। " (१) सूरदास अपने काव्य के माध्यम से कृष्ण के बाल्य रूप पर वात्सल्य प्रेम की वर्षा करते हैं।

कृष्ण जन्म की आनंद बधाई के साथ ही बाल लीला का आरम्भ हो जाता है। जितने विशद व विस्तृत रूप में बाल्य जीवन का चित्रण सूरदास ने किया है , उतना किसी अन्य कवि

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# परिषद्-पत्रिका

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अक्टूबर २०२१ से मार्च २०२२

परामर्शी

प्रो० सिद्धेश्वर प्रसाद

प्रो० (डॉ०) राम वचन राय

प्रो० (डॉ०) वीरेन्द्र नाययण यादव

प्रो० (डॉ०) रामधारी सिंह 'दिव्यकर'

प्रो० (डॉ०) शरदेन्द्र कुमार

प्रधान सम्पादक

सत्येन्द्र कुमार

वर्ष : ६१ ❖ अंक : ३-४

क्रमांक : २३२



सम्पादक  
मुकेश कुमार



बिहार-राष्ट्रभाषा-परिषद्

उच्च शिक्षा विभाग, बिहार सरकार

आचार्य शिवपूजन सहाय मार्ग

सैदपुर, पटना-८०० ००४ (बिहार)

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## विषय-प्रस्तुति

अतीत-दर्शन	शिव कुमार मिश्रा	I-XI
सम्पादकीय	सत्येन्द्र कुमार	XII-XIV
<b>लेख</b>		
❖ डॉ० मुकेश कुमार	हिन्दी साहित्य का नाथ सम्प्रदाय	००-००
❖ डॉ० सरिता सिन्हा	तीसरी कसम के सेट पर आलोचनात्मक समीक्षा	०१-०९
❖ डॉ० नियति कल्प	ठेस : छोटी कथा का बड़ा वितान	०१-०९
❖ डॉ० अमित कुमार	प्रेमचन्द की परंपरा और आंचलिकता एवं मैला आंचल	०१-०९
❖ डॉ० आशा कुमारी	सृजनात्मक प्रतिभा के धनी श्री फणीश्वरनाथ रेणु	०१-०९
❖ डॉ० नवीन कुमार	आंचलिक कथाकार 'रेणु' की भाषा तथा अंचल का बदलता स्वरूप	०१-०९
❖ डॉ० रामदेव प्रसाद	आंचलिकता तथा रेणु के आंचलिक उपन्यास	०१-०९
❖ डॉ० दिव्या कुमारी	रेणु का कथा-संसार : परिवर्तनशील समाज तथा लुप्त होती लोक-संस्कृति	०१-०९

❖ डॉ० नवीन कुमार	वर्तमान परिप्रेक्ष्य में राहुल सांकृत्यायन की 'जापान' यात्रा का महत्त्व	०१-०९
❖ डॉ० अंकिता कुमारी	राष्ट्र एवं राष्ट्रभाषा हित आकांक्षी : राहुल सांकृत्यायन	०१-०९
❖ डॉ० शुचि स्नेह	रेणु का कथेतर साहित्य	०१-०९
❖ डॉ० नाजनी कौसर	हिन्दी के अप्रिमत कथाशिल्पी और लेखक : रेणु जी के रचनाओं का भाव, शिल्प एवं केन्द्रीय दृष्टि	०१-०९
❖ चितरंजन भारती	रेणु की 'तीसरी कसम'	०१-०९
❖ राम कुमार निराला	लोक जीवन के उत्कृष्ट रचनाकार रेणु	०१-०९
❖ शिवनन्दन प्रसाद	साहित्य पथिक : सांकृत्यायन	०१-०९
❖ अमित कुमार मिश्रा	सतत् यात्रा का पथिक : राहुल सांकृत्यायन	०१-०९
❖ रीतिका उत्तम	रेणु के उपन्यासों में भारतीय समाज	०१-०९
❖ डॉ० नरेश कुमार	मैला आंचल : उपन्यास का नया परिदृश्य	०१-०९
❖ डॉ० हरिकिशोर यादाव	मैला आंचल की आंचलिकता	०१-०९
❖ निधि चन्द्र	हिन्दी आलोचना में मैला आंचल का मूल्यांकन	०१-०९

### स्वाध्याय-कक्ष

- ❖ चितरंजन भारती ना कोई इस पार हमारा ०१-०९
- ❖ डॉ० ओ०पी० जमुआर राहुल सांकृत्यायन का ०१-०९  
यायावरी साहित्य

### मधु-संचय

- ❖ प्रो० राम भगवान सिंह रेणु साहित्य बनाम भारतीय ०१-०९  
अंग्रेजी साहित्य
- ❖ प्रो० अंगराज चौधरी पंडित राहुल सांकृत्यायन और ०१-०९  
मानव समाज की उनकी  
परिकल्पना
- ❖ डॉ० सुचिता कुमारी अंचल की पृष्ठभूमि और ०१-०९  
साहित्यकार फणीश्वरनाथ रेणु
- ❖ डॉ० सुधा पाण्डेय यात्रा-साहित्य तथा विश्व-दर्शन ०१-०९  
में राहुल सांकृत्यायन का योगदान
- ❖ डॉ० रिहानुर्रहमान भारतीय शिक्षा और ०१-०९  
मौलाना आजाद
- ❖ डॉ० रघुनाथ उपाध्याय कालजयी कहानी 'तीसरी ०१-०९  
'शलभ' का हीरामन
- ❖ डॉ० अशोक प्रियदर्शी भारत बंटवारे पर आँसू स ०१-०९  
बहाते 'मौलाना आजाद'
- ❖ डॉ० जंगवहादुर पाण्डेय राष्ट्रीय एकता के प्रतिमान : ०१-०९  
मौलाना आजाद

- ❖ डॉ० जंगवहादुर पाण्डेय मौलाना आजाद की ०१-०९  
'तारेश' शिक्षा दृष्टि
- ❖ डॉ० विनय कुमार विष्णुपुरी आजाद मुल्क का प्रथम ०१-०९  
केंद्रीय शिक्षा मंत्री मौलाना  
कलाम आजाद एक अध्ययन
- ❖ डॉ० विनय कुमार विष्णुपुरी फनीश्वरनाथ 'रेणु' जीवन एवं ०१-०९  
साहित्य परिचय एक झलक
- ❖ भारत यायावर रेणु का भूत ००-००
- ❖ भगवती प्रसाद द्विवेदी स्त्री-विर्मश के निकष पर ०१-०९  
'रेणु' की कहानियाँ
- ❖ ओम प्रकाश सिन्हा उर्दू पत्रकारिता का पूराधा ०१-०९  
एवम् बहुमुखी प्रतिभा के धनी  
अवुल कलाम आजाद
- ❖ सुनील कुमार सिन्हा राष्ट्रभक्त मौलाना अवुल कलाम ०१-०९  
आजाद

'परिषद्-पत्रिका' में प्रकाशित निबन्धों में प्रतिपादित विचारों एवं तथ्यों का उत्तरदायित्व निबन्ध-लेखकों का है, सम्पादक का नहीं।  
सम्पादक  
निवेदन : लेखकों से निवेदन है कि वे अपनी रचनाएँ मौलिक एवं अप्रकाशित तथा टाईप करवाकर केवल मूल प्रति में पूर्ण पता, अपनी चलभाषा सं. एवं पिनकोड ( अनिवार्य रूप से ) सहित ही भेजने की कृपा करें।

• नाथों का मानना है कि जो शरीर में है वही ब्रह्मांड में है। अर्थात् ब्रह्मांड में जितनी भी चीजें हैं उन सब में ब्रह्म का अंश है। गोरखनाथ ने लिखा भी है कि 'जोई-जोई पिंडे सोई ब्रह्मांडे।'

• नाथों का तंत्र बौद्ध सिद्धों का वीभत्स तन्त्र नहीं था। चमत्कार वे भी करते थे, पर उनका चमत्कार योगजन्य था। वे ब्रह्मचर्य और योगाभ्यास पर अधिक बल देते थे।

• नाथ सम्प्रदाय की मुख्य विशेषताएँ (प्रवृत्तियाँ)—

ब्रह्मचर्य का पालन, जांत-पांत, कर्मकांड का विरोध, नारी भोग का विरोध, शून्य समाधि, नाड़ी साधना, कुंडलिनी, इंगला, पिंगला, षट्चक्र आदि की साधना का प्रचार-प्रसार, रहस्यात्मकता, प्रतीक और रूपक का प्रयोग, सधुक्कड़ी भाषा का प्रयोग। □

—ग्राम व पो० प्योत

जिला : करनाल,

हरियाणा : 132036,

चलभाष सं० : 7988414315

संदर्भ :

१. आचार्य रामचंद्र शुक्ल, हिन्दी साहित्य का इतिहास।
२. डॉ० वच्चन सिंह, हिन्दी साहित्य का दूसरा इतिहास।
३. सं० डॉ० नगेन्द्र, हिन्दी साहित्य का इतिहास।
४. डॉ० रामस्वरूप चतुर्वेदी, हिन्दी साहित्य और संवेदना का विकास।
५. डॉ० लक्ष्मीसागर वाण्येय, हिन्दी साहित्य का इतिहास।
६. डॉ० विवेक शंकर, हिन्दी साहित्य।
७. उमेश तिवारी, सूचनापरक हिन्दी साहित्य।
८. सरस्वती पाण्डेय, गोविन्द पाण्डेय, हिन्दी भाषा एवं साहित्य का वस्तुनिष्ठ इतिहास
९. रमेश ठाकुर, आदिकालीन हिन्दी साहित्य (वस्तुनिष्ठ)।

## ‘तीसरी कसम के सेट पर’ : आलोचनात्मक समीक्षा

□ डॉ० सरिता सिन्हा

बिहार की धरती हमेशा से क्रांतिकारी, सृजनात्मक, नयी सोच, नयी संवेदना और मानवीयता के नवांकुरों से समृद्ध रही है। इसी पावन धरती पर ४ मार्च १९२१ ई. को औराही हिंगना (अररिया जिलान्तर्गत) में हिन्दी के अप्रतिम साहित्यकार फणीश्वर नाथ 'रेणु' का जन्म हुआ था। फणीश्वर नाथ 'रेणु' ने अपने समृद्ध रचनात्मक ऊर्जा के सहारे हिन्दी साहित्य में एक अलग पैठ बनाई। इन्होंने न केवल कथा साहित्य लेखन में ख्याति प्राप्त की बल्कि संस्मरण, रेखाचित्र और रिपोर्ताज आदि विधाओं में भी अपनी लेखनी चलाई।

सन् १९५७ ई. में पटना से नर्मदेश्वर प्रसाद के सम्पादन में प्रकाशित होने वाली पत्रिका 'अपरम्परा' में फणीश्वर नाथ 'रेणु' की एक कहानी 'मारे गए गुलफाम' प्रकाशित हुई थी। बाद में सन् १९६६ ई. में इसी कहानी पर 'तीसरी कसम' नामक फिल्म बनाई गयी थी जिसके निर्देशक वासु भट्टाचार्य, गीतकार शैलेन्द्र, नृत्य निर्देशक लच्छू महाराज और कैमरामैन सुब्रत मित्रा थे। इस फिल्म के सिलसिले में एक पटकथा लेखक के तौर पर फणीश्वर नाथ 'रेणु' को कई बार बम्बई की यात्रा करनी पड़ी थी। अपने अनुभव को उन्होंने एक फिल्मी यात्रा 'तीसरी कसम के सेट पर तीन दिन' स्मृति की एक रील में व्यक्त किया है। 'रेणु' की यह रचना धर्मयुग नामक एक साप्ताहिक पत्रिका (जो टाइम्स ऑफ इंडिया समूह द्वारा मुंबई से प्रकाशित होती थी) में २६ अप्रैल १९६४ ई. को प्रकाशित हुई थी। (स्रोत- अंतरजाल, रचना उपलब्ध ummeed.com) अपने विधागत तत्वाँ जैसे तथ्यात्मकता,



वातावरण की जीवन्तता, भावनात्मक संवेदना, मानवीय दृष्टिकोण एवम् नाटकीयता के कारण 'रेणु' की यह कृति 'रिपोर्ताज' की श्रेणी में रखी जा सकती है ।

इस फिल्म की कार्टिंग की शूटिंग पटकथा लेखक फणीश्वर नाथ 'रेणु' के गाँव औराही हिंगना के आँगन में हुई थी । यह गाँव अररिया जिले में है । फिल्म की यादें पुर्णिया जिले से जुड़ी हैं, जैसे—गुलाब बाग मेला की द ग्रेट भारत नौटंकी कंपनी, गढ़बनैली रेलवे स्टेशन आदि.....।

पटकथा लेखक 'रेणु' को फिल्म 'तीसरी कसम' की शूटिंग देखने के लिए बम्बई आमंत्रित किया गया था । बम्बई के कमाल स्टूडियो में शूटिंग चल रही थी । लगभग आधी फिल्म बन चुकी थी तब 'रेणु' बम्बई पहुँचे थे । वहाँ पहुँचकर सेट पर अर्जित अपने तीन दिनों के व्यक्तिगत अनुभव को भावप्रवणता के साथ वे इस रूप में प्रस्तुत करते हैं कि पाठको के समक्ष घटनाएँ सचित्र उपस्थित होने लगती हैं ।

'रेणु' के रिपोर्ताज की सबसे बड़ी विशेषता यही है कि उसमें बिहार की राजनीतिक, सामाजिक एवं सांस्कृतिक चेतना पूरी तरह उपस्थित हो गयी है । पहले सदन के दृश्य को आत्मीय संस्मरण के सहारे शब्दबद्ध करते हुए 'रेणु' कहते हैं कि प्रोड्यूसर, डायरेक्टर और अन्य असिस्टेंट्स ने शूटिंग से पहले ही लोकेशन देख लिया था । परिणाम स्वरूप सेट हू-ब-हू वैसा ही लग रहा था जैसे पुर्णिया के गुलाब-बाग मेले में था । एक ओर नौटंकी का सेट लगा हुआ था और स्टेज के पीछे करीब आधे दर्जन तम्बू । दूसरी ओर गाड़ीवान, पट्टी के एक किनारे एक टप्पर गाड़ी खुली पड़ी थी । गाड़ी के पास गोबर, गोमूत्र के कीचड़ में घुटना टेक कर भक्तिभाव से अभिनेता डायलॉग और एक्शन की रिहर्सल कर रहा था । शूटिंग के दौरान इन दृश्यों से जुड़ी हुई साहित्यकार की स्मृतियाँ यह बताती हैं कि एक फिल्म बनाने के लिए साधन, संसाधन, मेहनत, तार्किकता और सृजनात्मकता बहुत महत्वपूर्ण होती है । यही वजह रही होगी कि कैमरामैन सुब्रत बाबू थोड़े

असंतुष्ट होते हुए कहते हैं—“मेला में हम जैसा फॉगी इवनिंग (कुहरा भरी संध्या) देखा है, वैसा इफेक्ट कहाँ.....?”<sup>१३</sup> आखिरकार तीनों डायरेक्टरों की मदद से सुब्रत मित्रा के मन के अनुसार धूप, गुग्गुल आदि के सहारे पवित्र, सुगंधमयी कोहरा भरी साँझ फिर आई । इसी बीच स्लेटी रंग की फूलदार साड़ी पहने फिल्म की नायिका हीराबाई (वहीदा रहमान) का प्रवेश होता है । वह टप्पर में जा कर बैठ जाती है । दृश्य के अनुसार उसके पाँव टप्पर से बाहर थे । अभिनेता पलटदास इन पैरों की सेवा करने को आतुर और डायरेक्टर साहब पैरों के पोज के लिए परेशान थे । गीतकार व प्रोड्यूसर शैलेन्द्र दूर से ही पैरों के रिदम की बातें सोच रहे थे । लगभग पैतालीस मिनट बाद संवाद और अभिनय का रिहर्सल शुरू हुआ—“क्या है ? बोलो. ...हाँ-हाँ-कहो.....अरे क्या ? बाजा बनाना चाहते हो ?.....जी.....चरण सेवा. ....आप सिया सुकुमारी..... मैं सेवक.....।” “हीराबाई तमककर पैर छुड़ती है, अरे, भाग !.....भाग जा यहाँ से । पलटदास देखता है..... सिया सुकुमारी की आँखों में चिनगारी ?”<sup>१४</sup> सेट का यह दृश्य हमें उस आंचलिक दुनिया की सैर कराता है जो भारतीय गाँवों का प्रतिनिधित्व करते हैं । लेखक इस सेट का वर्णन करते हुए इतने तन्मय हो जाते हैं कि उनके शब्द, चित्र और चेतना का एकाकार हो जाता है ।

इस फिल्म में लेखक की कल्पना में हीराबाई को हू-ब-हू उतारा है । ऐसा लेखक स्वयं भी मानते हैं । पहले दिन की शूटिंग के दौरान असिस्टेंट डायरेक्टर बासु चटर्ज (जो बम्बई के एक मशहूर कार्टूनिस्ट भी थे) ने 'रेणु' के पास आकर धीरे से कहा “जरा कैमरा के 'व्यू फाईंडर' में आँख सटाकर देखिये, तब पता चलेगा कि गाड़ी में कैसा 'चंपा का फूल' है ।”<sup>१५</sup> 'रेणु' ने मना करते हुए कहा—“मैंने जिस चश्मे से हीराबाई को देखा है, देख रहा हूँ ।”<sup>१६</sup> बासु चटर्जी के आग्रह करने पर 'रेणु' तीन वर्ष पहले की उस एक स्मृति का जिज्ञा करते हैं जब सुब्रत बाबू के साथ आउटडोर के लिए लोकेशन देखने और गुलाब बाग मेले की शूटिंग के लिए 'तीसरी कसम' फिल्म की यूनिट पुर्णिया आयी थी । ये लोग 'रेणु' के साथ करीब एक

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## नागाफनी

वर्ष-12 अंक-42, जुलाई -सितंबर 2022

पृष्ठ क्रमांक

अनुक्रम

अनुक्रम	पृष्ठ क्रमांक
सपादकीय	05
पाठकों की प्रतिक्रिया	06
साहित्यिक विमर्श	
1. जिंदगी 50-50 उपन्यास की 'हर्षिता' का जीवन-संघर्ष-डॉ. पी. सरस्वती	7-8
2. प्रयोगधर्मी उपन्यासकार-अज्ञेय-डॉ. मुरलीधर अच्युतराव लाहाडे	9-10
3. भोजपुरी फिल्म और प्रयुक्त हिन्दी लोकगीत का स्वरूप एवं सम्भावनाएँ-डॉ. शिवम् चतुर्वेदी	10-12
4. भारतीय नवजागरण और आधुनिक हिन्दी साहित्य: भारतेद एवं प्रसाद की नाट्य रचनाओं के संदर्भ में- डॉ. बालेन्द्र सिंह यादव	13-15
5. राही मासूम रजा के उपन्यासों में अभिव्यक्त गंगा जमुनी संस्कृति-डॉ. गणेश एम.	16
6. हिंदी कन्नड़ और कन्नड़-हिंदी अनुवाद: परंपरा और प्रदेश-डॉ. साहिराबानू बी. बोरगल	17-18
7. मंगलेश डबराल की कविताओं में सामाजिक यथार्थ-डॉ. सुनील एम. पाटिल	18-19
8. महादेवी वर्मा के साहित्य में नारी सशक्तिकरण की पहल-डॉ. राजन तनवर	20
9. डिजिटल मीडिया में हिन्दी की वर्तमान स्थिति-डॉ. विनय कुमार चौधरी	21-22
10. नागार्जुन के उपन्यासों में नारी विमर्श-वीणा शर्मा/डॉ. शिवम् चतुर्वेदी	23-25
11. सुरजीत पातर की कविताओं में बदलते नैतिक मूल्य एवं सत्ता पर व्यंग्य-डॉ. सुरजीत सिंह खरवाल	25-27
12. पुणतांबेकर का व्यंग्य : व्यापक तथ्यों की सूक्ष्म अभिव्यक्तियाँ-डॉ. मीना सुतवणी	27-29
13. 'फेटेसी' के शिल्पकार-कवि गजानन माधव मुक्तिबोध-डॉ. एन. पी. प्रजापति	29-31
14. 'तहबील' की कहानियों में सामाजिक जीवन मूल्य-डॉ. आर्या वी. एस.	31-32
15. स्वातंत्र्योत्तर व्यंग्य निबंध साहित्य: राजनीतिक परिप्रेक्ष्य में-डॉ. सचिन कदम/गणेश गणाले	33-34
16. शोध-प्रकार और समीक्षा-डॉ. समय लाल प्रजापति	34-35
17. वृद्धावस्था की त्रासदी और 'नट सम्राट'-प्रो. संजय एल. मादार	35-36
18. 'पंचलाइट': एक पुनर्पाठ-डॉ. निम्मी ए. ए.	37-38
19. आदिकाल में नाथ सम्प्रदाय: महत्व एवं योगदान-रीना रानी	39
20. कल्चर-वल्चर उपन्यास: साहित्य, राजनीति एवं व्यवसाय की यथार्थ परिकल्पना-रेणु देवी	40-41
21. हिन्दी की कहानियों में चित्रित प्रवचन की समस्या-डॉ. मनिका शङ्कीया	42-43
22. मानवीय मूल्यों के सृजनहार: प्रेमचंद-चेतन चंद जोशी	43-45
23. 'कोसला': कथ्य और शिल्प के नए प्रयोग-डॉ. सुषमा कुमारी	46-48
24. साहित्य: एक सामाजिक उत्पादन-डॉ. सरिता सिन्हा	48-49
25. समकालीन मलयालम कविता-अधृती एस	50-51
26. धार्मिक उन्माद का चित्रण: विशाल-किरण मिश्रा	52-53
27. अज्ञेय जी के कहानियों में अभिव्यक्त मानवीय संवेदना-प्रार्थना गोगोई	54-55
28. 'इन्हीं हथियारों से' उपन्यास में अन्तिम जन का प्रतिरोध- शिवम कुमार	56-57
29. गुरू जम्भवाणी में निहित चेतना-किरण मयी	58-60
30. हिन्दी साहित्य में वृद्ध विमर्श-जितेन्द्र कुमार	60-62
31. आधुनिक हिन्दी काव्य और उसका विकास-अनिल कुमार मेरावी	62-63
32. माधव कौशिक की गजलों में काव्य भाषा-हरी राम	64-65
33. तेलुगू भाषा आविर्भाव, विकास और संस्कृति-डॉ. आर. एन. शीला	65-97
34. अभिमन्यु अनंत कृत 'अपना मन उपवन' उपन्यास में पर्यावरणीय विमर्श-जयन्ती/डॉ. रामरति	68-69
35. भगवानदास मोरवाल के कथा साहित्य में मानवाधिकार-अजय जी कम्मत	69-71
36. 'शिक्षा शेरनी का दूध है' इस संकल्पना को दर्शाता 'छप्पर' उपन्यास-सिलपाका चेंकटाट्टी	72-73
<b>स्त्री विमर्श</b>	
1. असम में नारी शिक्षा: एक अवलोकन-प्रशांत लम्बर	74-45
2. दलित महिला सशक्तिकरण: एक समाजशास्त्रीय विश्लेषण-रीता भारती/डॉ. कमलेश कुमार सिंह	76-78
3. हिन्दी साहित्य में पारिस्थितिक नारीवाद-अन्वेया कबिरला	78-79
4. भगवानदास मोरवाल के उपन्यासों में स्त्री-संसार-सुबाष	80-81
5. स्त्री शिक्षा-समलक अप्पु/डॉ. शिवम् चतुर्वेदी	81-82
6. समकालीन हिंदी कहानों में स्त्री दृष्टि- रेखा शर्मा/डॉ. रजिया बेगम	83-84
<b>दलित विमर्श</b>	
1. दलित आलोचना के प्रमुख मूह: एक संक्षिप्त विश्लेषण- डॉ. जयसिंह मीणा	85-86
2. मोहनदास नैमिशराय की कहानियों में दलित संघर्ष ('हमारा जवाब' कहानी संग्रह के विशेष सन्दर्भ में)-शिल्पा दत्त	87-88
3. हिंदी साहित्य में दलित चेतना-वैशाली काशिनाथ गायकवाड	89-90
4. दलित शब्द का अर्थ, परिभाषा एवं अवधारणाएँ-भूप सिंह/डॉ. जोगीराम	90-91
6. जातिवादी राजनीति का पोल खोलता प्रेमकुमार 'मणि' का उपन्यास 'दलान'-डॉ. जे. आत्माराम	92-94

त्रैमासिक साहित्यिक पत्रिका- 'नागफनी' वर्ष-12 अंक-42 जुलाई-सितंबर 2022

दिखाई दे रही है। तब इनको जचगियां होंगी। इन्हें छोटे-छोटे बच्चे पैदा होंगे। हमारे कुछ भी नहीं होगा।" इस तरह पूरी की पूरी कथा एक सपन आत्मीयता और भोलेपन के साथ पाठक के सामने घटती चली जाती है। सांगवीकर का आंतरिक और बाह्य दोनों ही पाठकों के सामने खुला हुआ रहता है। यूँ तो पूरी कथा 'प्लेश बैक' में चलती है लेकिन पाठक को कहीं अहसास भी नहीं हो पाता कि वह पुरानी घट चुकी घटनाओं को सुन रहा है। चूंकि सांगवीकर आरम्भ से लेकर अन्त तक पाठक के साथ रहता है इसलिए कथा में एक निरन्तरता बनी रहती है और पाठक को यह आभास भी नहीं हो पाता कि सांगवीकर के आस पास की दुनिया कितनी तेजी से बदल रही है। कथा में सांगवीकर तथा उसके परिवार के कुछ-एक सदस्यों को छोड़कर कोई पात्र ऐसा नहीं है जो आरम्भ से लेकर अंत तक मौजूद हो। पूरे उपन्यास में पच्चासों पात्र हैं जो कथा के विकास के साथ-साथ अचानक बड़े सहज भाव से प्रकट हो जाते हैं और फिर अपनी भूमिका निभा कर लुप्त भी हो जाते हैं। कुछ पात्र तो ऐसे हैं जिनकी सृष्टि उपन्यास के अंतिम भाग में हुई है, ऐसे पात्रों में बाबा बंनारास, बाबा झालानाथ के साथ-साथ जगन बाबा जैसे पात्र भी हैं जिनका जिक्र केवल दो पृष्ठों (285-86) पर हुआ है लेकिन ऐसे जैसे कि वे कथा में आरम्भ से मौजूद रहे हों। इन दो पृष्ठों में ही जगन बाबा सांगवीकर को अपने हिस्से का ज्ञान देकर गायब हो जाते हैं।

निष्कर्ष :-

संक्षेप में कहें तो बीस-पच्चीस वर्ष का सांगवीकर, जिन्दगी की कठिनाइयों से जूझता, नये नये अनुभवों को प्राप्त करता और अपनी पहचान की तलाश में लगा सांगवीकर हममें से कोई भी हो सकता है, बल्कि और ठीक-ठीक कहें तो वह 'सो में से नित्यानवे' के भीतर मौजूद है। वह हमारा इतना परिचित है कि उसका कुछ भी अजीब नहीं लगता न तो व्यक्तित्व न ही कृतित्व और न ही उसकी भाषा। दरअसल इस उपन्यास और उसके नायक सांगवीकर में कुछ भी विशिष्ट नहीं है लेकिन चूंकि 'कोसला' के पहले के उपन्यासों की परम्परा विशिष्टता पर ही आधारित थी इसीलिए 'कोसला' की यह 'सामान्यता' उसे विशिष्टों में भी विशिष्ट बना देती है और इसीलिए मराठी उपन्यास की परम्परा में 'कोसला' मील का पत्थर है।

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## साहित्य : एक सामाजिक उत्पादन

डॉ. सरिता सिन्हा

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(पाटलिपुत्र विश्वविद्यालय), पटना

साहित्य एक सामाजिक उत्पादन है क्योंकि यह अपने अंदर समाज की वस्तुस्थिति, यथार्थ और अपने से जुड़े व्यक्ति तथा वस्तु की झलकियां या यूँ कहें की झांकियाँ प्रस्तुत करता है। यह बात अपने आप ही स्पष्ट हो जाती है जब हम साहित्य की परिभाषा को (जो शुरू से ही आलोचकों द्वारा दी जाती रही है) अपने ध्यान में लाते हैं। उन्नीसवीं सदी में समाजशास्त्रीय चिंतन साहित्य से समाज को दो स्तरों पर जोड़ता था - (i) एक शक्ति के रूप में समाज को साहित्य की उत्पत्ति मानते हुए उसके स्वरूप को निर्धारित करने में और (ii) साहित्य को समाज के दर्पण के रूप में। महावीर प्रसाद द्विवेदी के युग में साहित्य की दर्पणवादी दृष्टिकोण का बहुत प्रचलन था। उस युग के लेखकों ने बार-बार साहित्य को समाज का दर्पण कहा। साहित्य को समाज का दर्पण मानने वाला यह दृष्टिकोण रचनाकार की चेतना की क्रियाशीलता की उपेक्षा करता है। लेखक अपनी रचना में समाज को सिर्फ प्रतिबिंबित ही नहीं करता बल्कि अपनी रचना में वह समाज को नए सिरे से रचता भी है। इस प्रक्रिया में उसकी कल्पनाएं और आकांक्षाएँ भी व्यक्त होती हैं। इसके साथ-साथ यह भी मानना होगा कि समाज उस साहित्य या रचना की अंतर्वस्तु में ही नहीं होता, उसके रूप और शिल्प में भी होता है। "दर्पणवादी दृष्टिकोण में न तो शिल्प की विशेषताओं का विवेचन होता है और न ही विशेषताओं में अभिव्यक्त समाज की खोज होती है"<sup>(1)</sup> इस मान्यता से हम इंकार नहीं कर सकते कि रचना के बेहतर समझदारी के लिए उसके सामाजिक संदर्भ की जानकारी जरूरी है। अधिकांश साहित्यिक समाजशास्त्री यह मानते हैं कि किसी रचना की अंतर्वस्तु में ही समाज नहीं होता बल्कि समाज तो रचना के हर स्तर में अर्थात् भाषा, संरचना, शिल्प आदि में भी अभिव्यक्त होता है। जरूरत है रचना की उन विशेषताओं को पहचानने की जो उसकी संपूर्णता में समाज की खोज में मदद करें। इसके लिए बेन्थम ने 'अर्थ के मर्म' तथा गोल्डमैन ने 'विश्वदृष्टि' के विश्लेषण पर बल दिया। अडोर्नो के अनुसार 'अंतर्वस्तु के सत्य' का बोध आवश्यक है तो रेमंड विलियम्स के अनुसार 'अनुभूति की संरचनाओं' की पहचान। प्रो. मैनेजर पांडेय के अनुसार मार्क्सवादी साहित्य को सामाजिक चेतना का विशिष्ट रूप मानने वाले व्यक्ति विचारधारा के रूप में उसका (साहित्य का) विश्लेषण करते हुए साहित्य में समाज की खोज करते हैं।

आज के साहित्य शास्त्री रचना की अस्मिता को स्वीकार करते हुए समाज से उसके संबंध का विश्लेषण करते हैं। आचार्य रामचंद्र शुक्ल जब यह कहते हैं कि 'प्रत्येक देश का साहित्य वहां की जनता की चित्तवृत्ति का ही संचित प्रतिबिंब होता है', तो उनका अर्थ भी यही है कि साहित्य और समाज एक ही सिक्के के दो पहलु हैं। रचनाकार अपनी रचना में जनता की चित्तवृत्ति को स्थान देता है। सवाल यह कि क्या वह सामाजिक उपज नहीं है? रचनाकार अपनी निर्जीव वैयक्तिक एवं सांस्कृतिक संवेदनाओं और अनुभूतियों को ही अपनी रचनाओं में व्यक्त करने हेतु प्रयासरत नहीं होता, बल्कि वह समाज के सन्दर्भ में निजी अनुभूति को अथवा अनुभूत सामाजिक यथार्थ को अपनी साहित्यिक कृति में प्रतिबिंबित करके उसकी पुनः सृष्टि में सक्रिय होता है। प्रेमचंद ने गोदान में जिस समाज को अभिव्यक्ति दी है, वह उनकी अनुभूति से अलग नहीं लगता। अपनी वैयक्तिक अनुभूति को समस्त किसान वर्ग (समाज) की अनुभूति में ढालकर उन्होंने एक नए समाज की सृष्टि की है। इसमें अगर समाज का दुःखद यथार्थ है तो यथार्थ को परखने के बाद उसी के गर्भ में उन समस्याओं का निजात भी है। यही तो सृष्टि है जो रचनाकार की रचना में सक्रिय होता है। विश्वम्भर अनुसार साहित्य सर्जन स्वयं में एक सामाजिक प्रक्रिया है।

**MARATHI DALIT POETRY: AN ANALYTICAL EXPLORATION****MANNI RAM**Research Scholar  
Department of English  
J.P.University,  
Chapra**ABSTRACT:**

*This paper is devoted to the critical study of some representative modern dalit poems written in different languages specially in Marathi, Gujarati and Bhojpuri languages. The main purpose of this study is to dive deep into the theme of various dalit writers and their respective responses against the caste mentality, planted since the time immemorial. The poets of marathi languages have done the tremendous work for work upgrading the position of women and dalits in their different poems. Dalit poetry which appeared during the 70s was a reaction against the traditional and conventional caste mentality and social justice. In their works we get the spirit against social discrimination and fanaticism.*

**Keywords :-** *Dalit literature, Miserable plights, Dr. Ambedkar, Legends and histories, Manusmriti.*

The Dalits have been suffering from the untold plights and persecutions from the time immemorial. *Manusmriti*, the famous religious documentary book of the social lives of the Hindu, made several ifs and buts and put various obstacles in the path of the dalit sentiments. After the publication of this book, it created a great havoc in the field of thinking. Now the untouchables have been treated as an object. They have also been debarred from gaining knowledge particularly the Sanskrit and Vedic knowledge. According to this book an untouchable has no right to go to the temples; no freedom at all to listen to the incantations of the Vedas and scriptures. Sanskrit is supposed to be the richest language of the Aryan society but unfortunately the untouchables are deprived of the right of the reading and studying the language Sanskrit. As a matter of fact it is also one of the reasons for the deterioration of the language. Mahatma Gandhi and Dr. Ambedkar, Tagore and Vivekanand, Dayanand and Tilak have given a scathing attack on the castist mentality of India. Legends like Mahatma Gandhi even went the extent of saying the untouchable *Harijan*, the man of God; but in spite of all their efforts and several other constitutional provisions, dalit's condition is even more miserable. Their persecution and plight can be well seen in the famous novel *Untouchable* by M.R.Anand. The protagonist of the novel *Untouchable* bursts out in a fit of anger saying :-

*Why are we always abused? The sanitary inspector that day abused my father. They always abuse us. Because we are sweepers. Because we touch*

**THE REPRESENTATIVE DALIT POEMS OF HARISH  
MANGLAM AND M.B. GAIJAN: A STUDY IN THEME AND  
TECHNIQUE**

**DR. AMAR NATH PRASAD**  
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Jagdam College(J.P.University),  
Chapra

**MANNI RAM**  
Research Scholar (English)  
J.P.University,  
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**ABSTRACT:-**

*The contribution of Gujarati Dalit poetry to Dalit literature is immense. A number of Gujarati Dalit poets have expressed their inner feelings and subdued desires and aspirations in the form of poetry in a very poetic and asthetic manner. They have tried their best to portray a very truthful presentation of the plights and persecutions of the dalit and deserted. Their autobiographical presentations are even more truthful and poetic. Their rebellious feelings against the upper caste mentality are not simply the collection of only facts and figures, rather they are suffused with the various colours of poetic beauty and aesthetic pleasure. The poetry of Harish Manglam and M.B. Gaijan contains both feeling and form, matter and manner. This present paper is devoted to a critical and objective study of some selected poems of the aforesaid poets. It explores not only their theme but also the beautiful poetic language and style.*

**Keywords:-***Dalit Poetry, Cacophonous sound, Euphonic sound, Untouchability,*

*Social consciousness, Tyranny and injustice.*

Harish Mangalam is a great name in the present dalit literature in Gujarat. He has to his credit a number of dalit books of great significance. His novel *Tired* has been published in Hindi in 1992. His other short stories collection *Talap* has been published in Hindi and English. Most of his short stories have been published in English, Hindi, Urdu, Bengali, Oriya, Marathi and Telugu. On the other hand his short stories *Dayan* (The Mid Wife) has been selected for a tele film. He runs Gujarat Dalit Sahitya Akademi and edits a quarterly dalit journal *Hayati*. This Gujarati Dalit Sahitya Akademi has organised several national and international seminars and conferences related to dalit literature. It has also published more than 25 books. He has developed his own notion about the dalit poetry and literature. In one of his interviews he rightly defines Dalit literature:

Dalit literature is written for the downtrodden communities, i.e. the untouchables, the poor, the women, the marginal and the deprived, the neglected sections of the people etc... It depicts sorrows, sufferings, and injustice, and seeks to raise a strong protest against irrational deeds. The aim is to focus on rational thoughts.<sup>1</sup>

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मुद्रक, प्रकाशक एवं स्वामी अजय कुमार अग्रवाल द्वारा अदिति पब्लिकेशन के लिये, नया पाञ्चजन्य विद्या मंदिर के सामने, तिरंगा चौक के पास, कुशालपुर, रायपुर तहसील व जिला रायपुर छत्तीसगढ़ से प्रकाशित तथा अदिति पब्लिकेशन, नया पाञ्चजन्य विद्या मंदिर के सामने, तिरंगा चौक के पास, कुशालपुर, रायपुर, तहसील व जिला रायपुर छत्तीसगढ़ से मुद्रित किया गया है, संपादिका डॉ. (श्रीमती) शोभा अग्रवाल, मो० 9425210308





## The Rebellious Theme of Modern Dalit Poetry : An Exploration

### Abstract

Modern Dalit poetry written in different languages and vernaculars is now taking the shape of a new discipline in the field of Indian poetry in English. It has started taking its deep root in the fertile land of the Indian culture and civilization, myths and legends. Now the tree of this new poetry is blooming and blossoming with a new verve and gusto. Modern Dalit poets have presented a very realistic and truthful picture of contemporary society, the tyranny and injustice imposed on the dalit, the miserable plights and persecutions of the downtrodden, the multifarious aspects of human society, the unsatisfied desires and aspirations of the poor and the deserted and, above all, a conservative Indian society in which there is a little place of the marginalized.

### Keywords

Dalit Sentiments, Rebellions poetry, Search for individuality Marginalization, Untouchability.

### ORIGINAL ARTICLE



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The general poetry of Indian writing in English is generally supposed to be superior to dalit poetry, a new discipline developed recently. But a thorough and thoughtful study of dalit poetry clearly shows that it is not inferior to general poetry in any angle. If we minutely dive deep into its theme and technique, language and style, we come to the conclusion that Dalit poetry is rich in both theme and technique, feeling and form. Some of the poets in Marathi and Gujarati Dalit Poetry have presented ideas, views and vision in such a brilliant manner that they often remind us of the great giants of the modern poetry like Eliot and Yeats. Their images and symbols are very suggestive and up to the mark. Their psychological presentation with beautiful images and symbols and some new coinages is really very noteworthy. Their poems are not simply the collection of facts and figures, rather they are highly integrated and fully aesthetic appealing to the feelings and sentiments of a poetic man. In other words, their poems have a fine fusion of both feelings and forms. In the words of Matthew Arnold, they are fine examples of both 'poetic beauty' and 'poetic truth'.



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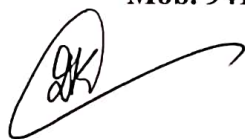
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- रामचरितमानस में अन्तर्निहित सामाजिक समरसता 81-84  
*हरीश प्रताप सिंह*, शोध छात्र, (यूजीसी, नेट/जेआरएफ), हिन्दी एवं भारतीय भाषा विज्ञान, रानी दुर्गावती, विश्वविद्यालय, जबलपुर, मध्य प्रदेश
- अबेकस प्रशिक्षित एवं गैर प्रशिक्षित विद्यार्थियों के आत्मविश्वास स्तर का अध्ययन 85-94  
*डॉ. यतीन कुमार चौबीसा*, सहायक आचार्य (शिक्षा संकाय), विद्या भवन गांधी शिक्षा अध्ययन संस्थान रामगिरी, उदयपुर, (राज.)
- स्वामी विवेकानन्द के अनुप्रयुक्त नीतिशास्त्र का एक पक्ष: धार्मिक कुरीतियों का निराकरण 95-98  
*श्याम चन्द*, शोध छात्र, दर्शनशास्त्र विभाग, इलाहाबाद विश्वविद्यालय, इलाहाबाद।
- विन्ध्याचल की त्रिकोण यात्रा 99-105  
*राम प्रकश*, शोध छात्र, इतिहास विभाग, काशी हिन्दू विश्वविद्यालय, वाराणसी।
- नक्सलवादी आंदोलन में बिहार के दलितों की भूमिका 106-113  
*रवि शंकर कुमार*, शोधार्थी, इतिहास विभाग, पटना विश्वविद्यालय, पटना
- जनसंख्या वृद्धि और पर्यावरणीय समस्याओं का विश्लेषणात्मक अध्ययन : बिहार राज्य के संदर्भ में 114-120  
*डॉ. नंद कुमार*, सह - प्राध्यापक, मनोविज्ञान विभाग, डी.बी कॉलेज, जयनगर, मधुबनी
- जैन एवं बौद्ध कालीन परिस्थितियों में नारी शिक्षा का विकास 121-128  
*अभिनव प्रताप मौर्या*, शोध छात्र, शिक्षा संकाय, कुटीर स्नातकोत्तर महाविद्यालय चक्के, जौनपुर  
*डॉ. रामेश्वर नाथ मिश्र*, असिस्टेंट प्रोफेसर, शिक्षा संकाय, कुटीर स्नातकोत्तर महाविद्यालय चक्के, जौनपुर
- हिंसा, अहिंसा और गांधी: एक अध्ययन 129-136  
*अनूप कुमार झा*, एसिस्टेंट प्रोफेसर, जगत जारायण लाल कालेज खागोल, पटना  
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## हिंसा, अहिंसा और गांधी: एक अध्ययन

अनुप कुमार झा\*  
अविनाश कुमार झा\*\*

अधतन अकादमिक परिपेक्ष्य में गाँधी एवं उनके विचार जवलंत और प्रासांगिक विषय के रूप में विमर्षित हैं। अहिंसा पर विचार करने के लिए आवश्यक प्रतीत होता है कि जो समाज विज्ञान में अबतक विचार किए गए हैं उनके लेखा-जोखा कुछ हद तक किया जाय। यह इसलिए भी आवश्यक है कि यह दोनों अवधारणाएँ एक दूसरे से सम्बद्ध हैं— भाषा के स्तर पर और ऐतिहासिक परिपेक्ष्य में। भाषा के स्तर पर अहिंसा का अर्थ साधारणतरु वो है जो "हिंसा" का नहीं है— यह नहीं का संबंध ऐसा होता है जिससे हम अगर हिंसा को जान पाते हैं तो "अहिंसा" या अहिंसक क्रिया के बारे में अनुमान लगाते हैं और अनुमान के आधार पर उसे जानने की कोशिश करते हैं या साथ ही साथ समाज में अपने आसपास हुई घटनाओं को हिंसा या अहिंसा का नाम देते हैं। ऐतिहासिक परिपेक्ष्य में "हिंसा" मानव सभ्यता के साथ कब से रहा है, कहना कठिन है। प्रायः सभ्यता के अरम्भिक जीवन से संबद्ध रहा है और साथ ही मनुष्य अहिंसा के तरफ प्रेरित भी रहा है, समय समय पर इस प्रसंग में विषद विचार भी प्रस्तुत किए जाते रहे हैं। ज्यादातर ऐसे विचार "हिंसा" की अवधारणा, सामाजिक या राष्ट्रीय स्तर पर उसका प्रकोप, उससे उत्पन्न क्षोभ, इत्यादि को ध्यान में रखकर ही प्रकट किए गए हैं। इसलिए जब हम गाँधी के अहिंसा जन्य विचार की व्याख्या, उसकी प्रासंगिकता एवं आज के अपने राष्ट्रीय राजनीतिक तथा सामाजिक जीवन में उसके ओचित्य का विश्लेषण करना चाहते हैं तो यह उचित ही है कि "हिंसा" के प्रसंग में विद्वानों ने अंतर्राष्ट्रीय स्तर पर क्या विचार किया है, यह जानने और तब उसके साथ अहिंसा सम्बन्धी विचार कुछ विद्वानों के द्वारा किस प्रकार उभरा है और उन विचारों में गाँधी का स्थान कहाँ है, उनमें कितनी गरिमा है, वह कितना सार्थक है। प्रस्तुत आलेख द्वारा इन पक्षों की विवेचना का एक प्रयास है।

गाँधी के अहिंसा मूलक विचारों को प्रायः टाल्यस्टय और क्रिश्चयन धर्म ग्रंथ से प्रेरणा मिली। मुख्य प्रेरणा केन्द्रित वैष्णव मत और गीता का भी योगदान रहा। आज की परिस्थिति में जब हिंसा राजनीति को आक्रांत किए हुए है, समाज इससे आतंकित हो रहा है। मैं समझता हूँ कि गाँधी के अहिंसा जन्य अनुशासन पर अगर बल दें, हम कम से कम कोशिश तो करें कि अनाशक्ति भाव आए— कोशिश से कुछ न कुछ तो अवश्य परिवर्तन

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*Contents*

- धर्म समन्वय की अवधारणा भारतीय संदर्भ में 1-4  
डॉ. अमृता कुमारी, सहायक प्राध्यापिका, दर्शनशास्त्र विभाग, यदुनंदन महाविद्यालय, दिघवारा (सारण)
- आदिकाल में उपलब्ध हिन्दी गद्य-साहित्य 5-8  
डॉ. पूनम तलवार, एसोसिएट प्रोफेसर, हिन्दी विभाग, डी.ए.वी. कॉलेज (लाहौर), अम्बाला शहर।
- संत दादू दयाल : एक अनुशीलन 9-15  
जगदीश लोहरा, असिस्टेंट प्रोफेसर, इतिहास विभाग, जे. एन. कॉलेज, धुर्वा, राँची
- भारतीय शासन व्यवस्था के नियम में प्रशासनिक सुधार-आयोग का महत्व-एक विश्लेषणात्मक अध्ययन 16-18  
डॉ. अमरेश पाठक, असिस्टेंट प्रोफेसर (राजनीतिशास्त्र), गांधी स्मारक त्रिवेणी पी.जी. कॉलेज बरदह, आजमगढ़
- प्रगतिवाद : एक विश्लेषण 19-26  
डॉ. किरण कुमारी, असिस्टेंट प्रोफेसर, स्नातकोत्तर हिन्दी विभाग, डोरण्डा महाविद्यालय, राँची
- रामचरितमानस के आध्यात्मिक पक्ष 27-33  
हरीश प्रताप सिंह, शोध छात्र, (यूजीसी, नेट/जेआरएफ), हिन्दी एवं भारतीय भाषा विज्ञान, रानी दुर्गावती, विश्वविद्यालय, जबलपुर, मध्य प्रदेश
- राष्ट्रवादी इतिहास लेखन का भारतीय राष्ट्रीय आंदोलन पर प्रभाव 34-40  
दीपमाला शाही, शोधार्थी, इतिहास विभाग, वीर कुंवर सिंह विश्वविद्यालय, आरा (बिहार)
- आधुनिक चुनार का सांस्कृतिक अध्ययन 41-46  
राम प्रकाश, शोध छात्र, इतिहास विभाग, काशी हिन्दू विश्वविद्यालय, वाराणसी।
- उदात्त समाज के निर्माण में श्रीमद्भगवद्गीता की भूमिका 47-58  
डॉ. प्रभास चन्द्र मिश्र, प्रोफेसर, स्नातकोत्तर इतिहास विभाग, ललित नारायण मिथिला विश्वविद्यालय कामेश्वरनगर, दरभंगा
- डॉ. अवेडकर के आर्थिक विचार एवं दर्शन : आधुनिक भारत के विशेष सदर्थ में 59-67  
शशि कान्त प्रसाद, सहायक प्राचार्य, अर्थशास्त्र विभाग, जगत नारायण लाल कॉलेज खगौल, पाटलिपुत्र विश्वविद्यालय पटना।



## डॉ. अंबेडकर के आर्थिक विचार एवं दर्शन : आधुनिक भारत के विशेष सदर्थ में

शशि कान्त प्रसाद\*

सारांश:-

डॉ० भीमराव अंबेदकर एक विख्यात शिक्षाविद प्रभावशाली वक्ता, संविधान निर्माता, योग्य प्रशासक, अर्थशास्त्री एवं विश्व के उन आधुनिक विचारकों में से एक है जिन्होंने आधुनिक भारत के निर्माण में देश को एक नई दिशा दी। वे भारत में समानता, सामाजिक, राजनीतिक एवं आर्थिक न्याय के पक्षधर थे। डॉ० अंबेडकर का मुख्य अध्ययन का विषय अर्थशास्त्र ही था। उनके आर्थिक विचार जिनमें सार्वजनिक वित्त, भूमि सुधार, सहकारी कृषि, रूपये की समस्या, आर्थिक विषमता, पूंजीवाद, मुद्रास्फूर्ति, औद्योगीकरण, कराधान, दलितों की आर्थिक स्वतंत्रता, श्रम सुधार, जल प्रबंधन एवं राज्य समाजवाद इत्यादि हैं। जल प्रबंधन एवं भूमि सुधार वर्तमान एवं भविष्य के लिए एक चुनौती है एवं शोध का विषय है साथ ही आजादी के बाद अनेको आर्थिक नीतियों में परिवर्तन हुआ है जैसे उदारीकरण नीजिकरण, एवं भूमंडलीकरण जिससे कई आर्थिक अवसर एवं विषमताएँ भी उत्पन्न हुए हैं। इस शोधपत्र का मुख्य उद्देश्य अंबेदकर की आर्थिक विचार का आधुनिक भारत के निर्माण में कितना प्रभाव एवं प्रासंगिक है और वर्तमान में जो आर्थिक विषमताएँ हैं उसे अंबेदकर के आर्थिक विचार से कैसे हल किया जा सकता है

**मूलशब्द:-** सामानता, आर्थिक न्याय, पूंजीवाद, राज्यसमाजवाद विषमता।

**प्रस्तावना**

'गुलाम को यह अहसास करा दो कि वह दास है, फिर वह स्वयं ही विद्रोह कर देगा'।

'डॉ० बी० आर० अंबेदकर खोए हुए अधिकार भीख माँगने से नहीं मिलते बल्कि संघर्ष करने से प्राप्त होते हैं'।

भारत रत्न डॉ० बी०-आर० अंबेडकर की पहचान मुख्य रूप से समाज सुधारक, दलितों और अभिवंचितों के हितैसी तथा भारतीय संविधान की रचना में मुख्य भूमिका निभाने वाले विधि विशेषज्ञ तथा राजनीतिज्ञ के रूपमें होता है। वे एक महान विचारक, इतिहासकार, समाजशास्त्र, मानवशास्त्र, राजनीतिज्ञ: कानून, धर्म, एवं एक महान अर्थशास्त्री थे। शताब्दियों से उपेक्षित, शोषित, उत्पीड़ित देश के करोड़ों अभिवंचितों के लिए डॉ० अंबेदकर ने दो सौ वर्ष से अधिक गुलामी के बाद आजाद हुए भारत में

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- चम्पू काव्य का स्वरूप विवेचन 51-54  
चन्द्रकिरण देवी, शोध छात्रा, संस्कृत, स्नातकोत्तर महाविद्यालय गाजीपुर
- नई कहानी आन्दोलन और भीष्म साहनी 55-58  
लाल मनीष कुमार, शोधार्थी, हिन्दी विभाग, रांची विश्वविद्यालय, रांची
- भारतीय साहित्य में राम की अवधारणा 59-63  
राजेश कुमार सिंह, बापू इंटर कॉलेज, पी.पी. गंज, गोरखपुर
- डीवी के शिक्षण पद्धति की वर्तमान शिक्षा में प्रासंगिकता 64-67  
डा. सुनीता त्रिपाठी, एसोसिएट प्रोफेसर, शिक्षाशास्त्र विभाग, के.बी.पी.जी. कालेज, मीरजापुर
- महिला श्रमिका के स्थिति में सुधार लाने के सरकारी प्रयत्न : एक समाजशास्त्रीय विश्लेषण 68-70  
डॉ. कुमारी अपराजिता, पीएच. डी. (समाजशास्त्र), बी. आर. अम्बेदकर विहार विश्वविद्यालय, मुजफ्फरपुर
- एमएसएमई सेक्टर का भारतीय अर्थव्यवस्था में योगदान 71-74  
डॉ. कौसर अली, सहायक प्रोफेसर, अर्थशास्त्र विभाग, कमला राय कॉलेज गोपालगंज
- भारत में औद्योगिक नीतियां तथा प्रभाव का समीक्षात्मक अध्ययन 75-81  
डॉ. अनिल कुमार सिंह, एसोसिएट प्रोफेसर- अर्थशास्त्र, के.बी.पी.जी. कालेज, मिर्जापुर
- राजपूतकालीन समाज में प्रचलित स्त्रियो के अधिकार 82-85  
अरविन्द कुमार यादव, यू.जी.सी. नेट (इतिहास)
- भारतीय सामन्त कालीन स्त्रियों की समाजिक दशा 86-89  
अतुल कुमार यादव, यू.जी.सी. नेट (इतिहास)
- बसन्ती : एक आधुनिक स्त्री स्वर 90-92  
निधि त्रिपाठी, शोध छात्रा, महात्मा गाँधी काशी विद्यापीठ, वाराणसी, उ.प्र.
- मानव स्थानान्तरण की प्रक्रिया : एक विश्लेषण 93-96  
डॉ. अरविन्द कुमार सिंह, एसोसिएट प्रोफेसर, भूगोल विभाग, देवेन्द्र पी.जी. कॉलेज बिल्थरा रोड़, बलिया
- सल्तनत काल में श्रमिक एवं दासवर्ग की भूमिका का ऐतिहासिक अध्ययन 97-100  
डॉ. पवन कुमार यादव, एसो. प्रोफेसर-इतिहास विभाग, आर.एम.पी. (पी.जी.) कॉलेज, सीतापुर
- राजकीय परिवहन कर्मशालाओं के कार्मिक प्रबन्ध एवं उसमें कार्यरत कर्मचारियों की समस्याएँ 101-107  
डॉ. (श्रीमती) कृष्णा सिंह, एसो.प्रो. (समाजशास्त्र), गाँधी स्मारक त्रिवेणी स्नातकोत्तर महाविद्यालय, बरदह, आजमगढ़
- भूदान आन्दोलन में जय प्रकाश नारायण का योगदान 108-112  
डॉ. अजित प्रसाद राय, राजनीति विज्ञान विभाग, गाँधी स्मारक त्रिवेणी पी.जी. कॉलेज, बरदह आजमगढ़ (उ.प्र.)
- हठयोग साधना में चक्र विचार 113-118  
राज नारायण सिंह, सहायक प्राध्यापक, दर्शनशास्त्र विभाग, आर.आर.एस कॉलेज, मोकामा (पटना)



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- रोगों का यौगिक निदान एवं चिकित्सा 207-212  
शशिरंजन कुमार चौधरी, शोध छात्र (भूगोल), ल. ना. मि. वि.वि.,  
दरभंगा
- भारत में बेरोजगारी एवं बेरोजगारी उन्मूलन कार्यक्रमों का 213-218  
प्रभाव  
डॉ. अनिल कुमार सिंह, एसोसिएट प्रोफेसर- अर्थशास्त्र, के.वी.पी.  
जी. कालेज, मिर्जापुर
- पूर्व-मध्यकालीन धार्मिक ग्रन्थों में शुद्धो की स्थिति 219-223  
अतुल कुमार यादव, यू.जी.सी. नेट (इतिहास)
- सांमन्त कालीन धार्मिक व्यवस्था एवं उसका महत्व 224-229  
अरविन्द कुमार यादव, यू.जी.सी. नेट (इतिहास)
- हलाला उपन्यास में स्त्री पीड़ा के रूप 230-233  
निधि त्रिपाठी, शोध छात्रा, महात्मा गाँधी, काशी विद्यापीठ, वाराणसी,  
उ.प्र.
- महिला सशक्तिकरण का सामाजिक, आर्थिक परिदृश्य : एक 234-239  
भौगोलिक अध्ययन हजारीबाग जिले के विशेष संदर्भ में  
डॉ. अरविन्द कुमार सिंह, एसोसिएट प्रोफेसर, भूगोल विभाग,  
देवेन्द्र पी.जी. कॉलेज, बिल्थरा रोड़, बलिया
- राजकीय परिवहन कर्मशालाओं के कार्मिक प्रबन्ध एवं उसमें 240-249  
कार्यरत कर्मचारियों की समस्याएँ  
(जनपदी मुख्यालय- आजमगढ़ नगर स्थित राजकीय परिवहन  
कर्मशाला के प्रबन्ध अधिकारियों तथा उसमें सेवारत विभिन्न  
वर्गीय कर्मचारियों के सर्वेक्षण पर आधारित एक समाज  
वैज्ञानिक अध्ययन)  
डॉ. (श्रीमती) कृष्णा सिंह, एसो.प्रो. (समाजशास्त्र), गाँधी स्मारक  
त्रिवेणी स्नातकोत्तर महाविद्यालय, बरदह, आजमगढ़
- शिक्षा और भाषा के विषय में आर.एम. हेयर का मत 250-254  
अजय कुमार पटेल, शोध छात्र, इलाहाबाद विश्वविद्यालय, प्रयागराज।
- हठयोग में षट्कर्म की अवधारणा : एक समीक्षात्मक अध्ययन 255-260  
राज नारायण सिंह, सहायक प्राध्यापक, दर्शनशास्त्र विभाग, आर.  
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## Factors Determining Household Income In Rural Bihar: A Micro Evidence from Gaya District

Rikil Chyrmang<sup>1</sup>. Raviranjana Kumar<sup>2</sup>. Preetam Kumar<sup>3</sup>. Rahul Prakash<sup>4</sup>. Rishi Raj<sup>5</sup>. Rajnandan Kumar Marandi<sup>6</sup>. \*

### Abstract

This study analyses the determining factors of rural household's income in four selected villages of Gaya district. The primary data was collected randomly from 94 sample households through a structured questionnaire. We have used the semi-log multiple regression model to examine the role of education, employment, land, and livestock in affecting the rural household's per capita income and wages. The study found that land has led to a 36 per cent increase in annual income of the rural households followed by employment, while livestock has affected the annual income of rural households by only 2 per cent. Education has a minimal impact on the annual income of households with only a 3.5 per cent improvement in the total annual income with one unit change in the level of education. The study finds that skilled and educated peoples generated more income from farm and non-farm sectors. Based on our result, we conclude that the promotion of public employment schemes is very essential for rural households to overcome the hindrance.

**Keywords:** Household income, income per capita, farming and non-farming activities, semi-log multiple regression analysis.

### Affiliation

#### Introduction

In India, 68.8 per cent of the total population are still living in the villages (Census, 2011). Agriculture is the main occupation and source of livelihood for the majority of the people who are living in the villages. So, the first option for livelihood is farming and the second option is non-farming activities. For farming, landholding and livestock are the determining factors, whereas, for non-farming: employment, occupation, and educational level is another important factor. Rural households are divided into three main categories: 1.) Households doing only farming. 2.) Household doing only non-farming activities. and 3.) Households doing both farm and non-farm activities (Akram, Irum, and Ali, 2011). There are so many studies related to agriculture and income done in the past but to our knowledge, there are few studies that include both farming and non-farming activities as the determining factors for rural income. In the current period, most of the households engaged in farming as well as non-farming activities to earn their livelihood in rural areas. The present study attempts to fill this gap and the aim to explore the relationship of farm and non-farm sources of rural income and its determinant.

The land is the main asset of the agriculture sector, but it is unequally distributed all over India. The maximum portion of the farmers is small and marginal. This creates disguised unemployment in the agriculture sector. There is a positive relationship between landholding and household income (Malik, 1996; Choudhary, 2003). At present, farmers in India are using High Yielding Varieties (HYV) seeds and Technology aiming to increase production as well as their income.

Livestock has also a positive relationship with rural household income in India. It has a complementary relationship with agriculture. People in Pakistan derived 30 - 40 per cent of their income from livestock, and this

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# Research Highlights

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## CONTENTS

### Research Highlights

○	इस्ट इंडिया कंपनी के काल में आर्थिक लूट नीरज कुमार	01-04
○	जनसत्ता युद्ध से उत्पन्न समस्याएँ डॉ. वीरेन्द्र कुमार सिंह प्रमित कुमार	05-10
○	गठबंधन सरकार और भारतीय प्रधानमंत्री: एक अवलोकन अंजू कुमारी सिन्हा	11-14
○	भारत में हादसों पर छोटी महिलाओं में सशक्तिकरण एवं चुनौतियाँ (विशेषतः वैश्वीकरण के संदर्भ में) कमलेश्वर प्रसाद	15-18
○	वैदिक एवं साम्राज्य-महामारत काल में स्थानीय स्वशासन का विकास : ऐतिहासिक परिदृश्य में अध्ययन डॉ. सिद्धांत वर्मा	19-22
○	जेन वर्म में महिलाओं की स्थिति : एक अध्ययन डॉ. सुधा किशोरी	23-25
○	भारतीय राष्ट्रीय आन्दोलन में कार्यस का योगदान : एक अध्ययन डॉ. स. शीम कुमारी	26-28
○	भारतीय चीन सीमा विवाद: ऐतिहासिक पृष्ठभूमि डॉ. अनसुया राज वि. कर कुमारी	29-33
○	प्राचीन भारतीय विज्ञान में विकेन्द्रित जीवन के योगदान : एक विश्लेषण डॉ. नरेन्द्र कुमार	34-36
○	भारत पुराणों में व्यक्त पूर्व मध्यकालीन जैन समाज : एक अध्ययन विशाल कुमार	37-39
○	प्राचीन भारतीय व्यापार एवं आयात-निर्यात व्यवस्था: एक अध्ययन राहुल कान्त कुमार	40-43
○	ब्राह्मण धर्म ग्रंथों में शिक्षा एवं शैक्षिक स्थिति: एक अवलोकन राजेश कुमार	44-48
○	सामाजिक संरचना में एकल और संयुक्त परिवार का स्वरूप रंजना कुमारी	49-51
○	महिलाओं के उत्थान में कल्याणकारी राज्यों का योगदान: बिहार के परिदृश्य में दीप्ता कुमारी	52-57
○	राष्ट्र के निर्माण में योगदान अन्वेषण के विचारों की अवधारणा सुजोत कुमारी राज	58-60
○	भारतीय महिलाओं की स्थिति एवं सामाजिक विकास: एक ऐतिहासिक अवलोकन सुषमा कुमारी	61-63

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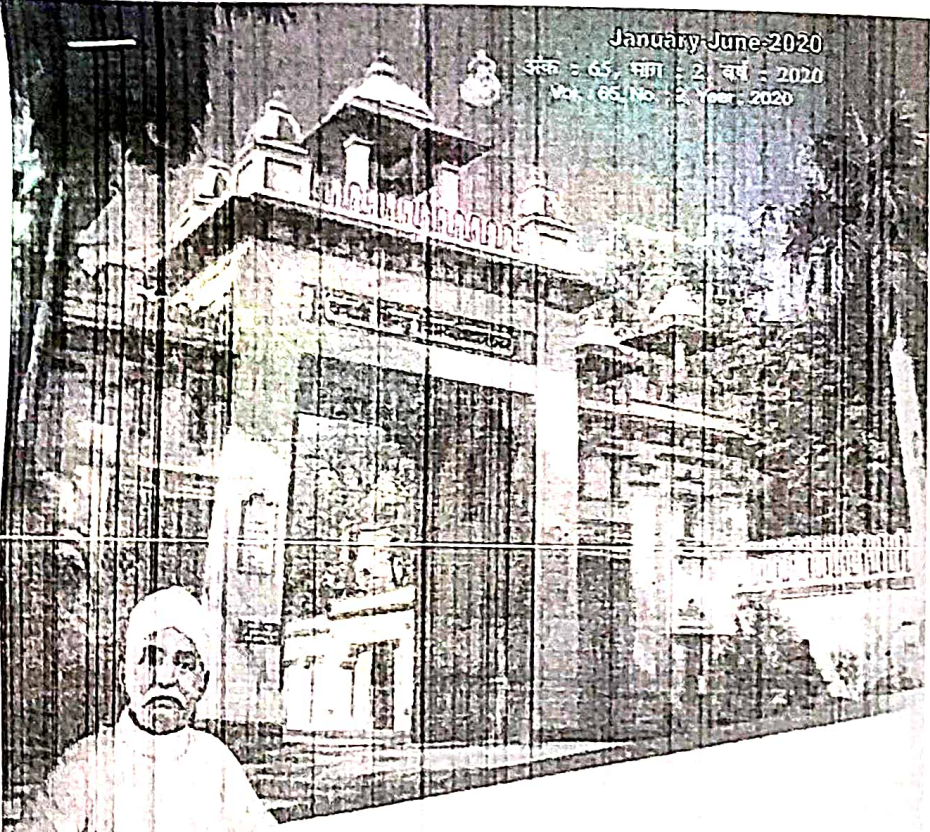
25 वर्षों से नियमित प्रकाशित

28. Impact of Self Help Groups (under Jeevika) On Socio-Economic Condition of Rural Household in Bihar (A Case Study of Samastipur District )	JAGADISH BARMAN	110
29. Prevalence and constellation of suicidal ideation in chronic Schizophrenic patients: A pilot study	Dr. Rashmi Sahay Dr. Dharmendra Kumar Singh	114
30. An Appraisal of SarvaShikshaAbhiyan in Saran district of Bihar	Arvind Kumar	118
31. Socio- Economic Impact of Migration on Scheduled Caste Population : A Case Study of Nalanda District	Pravin Kumar Prabhakar	123
32. हिन्दी दलित कविताओं में प्रतिरोध चेतना एक अनुशीलन	डॉ. धनदू मूवण राजक	127
33. प्राचीन बिहार में पंचलित अस्त्र-शस्त्र : एक अध्ययन	डिगपल	129
34. स्वतंत्रता भारत के बदलते सामाजिक परिवेश में पुलिस की भूमिका : एक अध्ययन	डॉ. मल्लिक आनंद	132
33. मतदान व्यवहार में क्षेत्रीय विविधता	डॉ. निवेदिता	136
36. वेद्यों व्यापार का बदला स्वरूप	डॉ. नीतीश कुमार	139
37. भारत के प्रधानमंत्री की वास्तविक स्थिति एवं भूमिका एक राजनीतिक अध्ययन	डॉ. अंजु कुमारी सिन्हा	142
38. ग्रामीण बस्ती का उदभव एवं विकास का भौगोलिक अध्ययन, बौध्ण जिला के संदर्भ में	डॉ. मनोज कुमार सुमन	146
39. श्रीलाल शुक्ल के उपन्यास और भाषा प्रयोग	डॉ. प्रेम कुमार	153
40. बिहार विधान परिषद का उदभव एवं विकास	डॉ. अशोक कुमार	169
41. बिहार के दलितों में राजनीतिक चेतना एक अद्यतन समीक्षा	राजीव कुमार रंजन	164
42. नागमती का वियोग-वर्णन का चारित्रिक यथार्थ	डॉ. रवि कुमार	167
43. प्राचीन भारतीय इतिहास में मौर्य एवं गुप्तकाल के मध्य सामाजिक एवं आर्थिक स्थिति : एक दृष्टि	कौशलेंद्र कुमार सुमन	170
44. हिन्द-चीन में भारतीय संस्कृति : एक अध्ययन	डॉ. कृपाशंकर प्रसाद	175
45. बिहार के रोहतास जिला के नगरीकरण की प्रवृत्ति : एक भौगोलिक अध्ययन	कुमार पुरुषोत्तम सुमन	179
46. प्राचीन बौद्ध शिक्षण केन्द्र: ओदन्तपुरी	संजीव कुमार	181
47. भारतीय राष्ट्रवादी आंदोलन में महिलाओं का योगदान : एक समीक्षा	डॉ. अजय कुमार	183
48. वैश्वीकरण और भारतीय प्रशासन: एक सामान्य अवलोकन	डॉ. अनिल शर्मा	187
49. State vs Nation: Curious case of Baloch Ethno-Nationalism in Pakistan	Dr. Shashi Kant	191
50. ROLE OF MSMEs IN ECONOMIC GROWTH - A STUDY ON INDIA'S PERSPECTIVE	Dr. Vinay Kumar Singh	200
51. मानसिक योग्यता का शैक्षिक उपलब्धि पर पड़ने वाले प्रभाव का अध्ययन	डॉ. विनय प्रताप सिंह डॉ. अब्दुल सत्तार	206
52. हिंदी के मौन साधक - आचार्य शिवपूजन सहाय	धर्मवीर प्रसाद वर्मा	209
53. सामाजिक और धार्मिक क्रान्ति के प्रणेता: संत रविदास	बेचनाथी राम	214
54. REVOLUTIONARY ACTIVITIES OF DACCAANUSHILAN SAMITHI AT SANTHALPARGANA IN THE BEGINNING OF 20th CENTURY	VIKAS KUMAR	217
55. TRAUMA AND PAIN OF EAST BENGALI REFUGEE WOMEN IN THE REFUGEE COLONY OF MUZAFFARPUR.	DR. MRINALIKA KUMARI	220

21/10/2020  
Anu...

January-June-2020

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21/10/2020*



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|-----|---|-----|
| 37. | इक्कीसवीं सदी में केन्द्र-राज्य प्रशासनिक एवं वित्तीय संबंध :<br>संवैधानिक स्थितियों के विशेष संदर्भ में।<br>रमेश कुमार ठाकुर                                   | 226 |
| 38. | राष्ट्रवाद का परिवर्तित स्वरूप एवं विश्लेषणात्मक अध्ययन<br>सोनु कुमार   | 232 |
| 39. | जाति व्यवस्था के परिवर्तन में उत्तरदायी कारकों की भूमिका<br>Dr. Sandhya Kumari  | 238 |
| 40. | ग्रामीण से नगरीय प्रवास को नियंत्रित करने में ग्रामीण सेवा केंद्रों<br>की भूमिका : पटना जिला के बहरामपुर गांव का एक सुक्ष्मस्तरीय<br>अध्ययन।<br>Dr. Vivek Kumar | 253 |
| 41. | Trends of Urbanisation in Patna District : A Geographical Analysis<br>Ashok Kumar   | 266 |
| 42. | भागमती का वियोग-घर्षण का चारित्रिक अर्थार्थ<br>डॉ० रवि कुमार  | 270 |
| 43. | बिहार के दलितों में राजनीतिक चेतना एक अद्वैत समीक्षा<br>राजीव कुमार रंजन  | 274 |
| 44. | सम्राट अशोक के बौद्ध धर्म का उद्भव और प्रचार-प्रसार<br>अमिताम कुमार   | 280 |
| 45. | बौद्ध धर्म का समकालीन समाज पर प्रभाव : एक नूतन विमर्श<br>नीरज कुमार   | 287 |
| 46. | प्राचीन भारत में शक्ति की उपासना<br>Dr. Sukirti Komari  | 291 |
| 47. | Development of Urban Centres In Kamala-Baghat Basin<br>: A Geographical Analysis<br>Dr. Ranjeet Sharma  | 297 |
| 48. | बिहार में टाल प्रदेश की कृषि विक्रियताई और दलित संभावनाई<br>अप्रम्य कुमार   | 305 |
| 49. | भारतीय शारल व्यवस्था में प्रधानमंत्री की संवैधानिक स्थिति<br>डॉ० अंजु कुमारी सिन्हा   | 310 |

Dr. Anjali  
Anju Kumari Sinha  
21/10/2020