



## Viscosity Measurement of Substituted Schiff's Bases in 70% DMF-Water Mixture at Different Temperature And Determination of Thermodynamic Parameters

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### Abstract

*By measuring viscosity of substituted Schiff's bases in 70% DMF-water mixture at different temperature, thermodynamic parameters like  $\Delta G$ ,  $\Delta H$  and  $\Delta S$  have been determined. The results have been interpreted in the light of solute-solvent and solute-solute interactions taking place in solutions of pure electrolytes.*

**Key Words:** Dimethyl Formamide,  $\alpha$ -para nitro phenyl imino, ethyl benzene, Gibb's free energy, Change in enthalpy, Change in entropy

### Introduction:

The Jones-Dole<sup>1</sup> equation accounts for the observed viscosity concentration dependence of dilute electrolyte solutions, while Nreslau-Miller<sup>2</sup>, Vand<sup>3</sup>, Moulik<sup>4</sup>, Thomson<sup>5</sup> and Einstein<sup>6</sup> equations account for the concentration dependence of viscosity in concentrated electrolyte solutions. Agrawal et al<sup>7</sup> have studied thermodynamic parameters of substituted 2,3-propane dione. Many attempts have been made to study viscosities of binary liquid mixtures. But no satisfactory result seems to have been obtained, especially for ligand systems showing appreciable departure from ideal behaviour<sup>8</sup>.

The structure of making and breaking properties of liquids, have been considered as a measure of solute-solute and solute-solvent interactions<sup>9, 10</sup>. Bary and Irving<sup>11</sup> determined the viscosities of concentrated aqueous electrolyte solution at various concentrations. The relative viscosities of ternary, aqueous, mixed electrolytic solutions for the system K<sup>+</sup>R<sup>-</sup>-NaBr, KBr-Bu<sub>4</sub>NBr, NaCl-NaBr and NaCl- Bu<sub>4</sub>NBr at various constant ionic strengths with varying electrolyte mole fractions (at 25 °C) have been determined by Patil<sup>12</sup>. Pandey Yasmin<sup>13</sup> have measured viscosities and densities of aqueous binary electrolyte solutions of different molalities. Mahajan<sup>14</sup> have studied viscosity B-coefficient of sulphonic acid ligands in different percentages of dioxane-water mixtures. Sondawale<sup>15</sup> have also studied the viscosity at different temperature using 20% dioxane-water and methanol-water mixtures. Recently, Agrawal<sup>16</sup> have determined the viscosity and some thermodynamic parameters in 70% acetone-water mixture.





### Experimental:

The solvents N-N dimethyl formamide AR grade (purity 99.9%) and doubly distilled water was used. Weighing was made on Mechaniki Zaktady Precyzyjnej Gdansk Balance, made in Poland ( $\pm 0.001$  gm). Densities of solutions were determined by a bicapillary Pyknometer ( $\pm 0.001$  gm) having a bulb volume of about  $10\text{ cm}^3$  and capillary having an internal diameter of 1 mm and calibrated with deionised doubly distilled water. The accuracy of density measurement was within  $\pm 0.1\text{ Kgm}^{-3}$ . The viscosities were measured by means of Ostwald's Viscometer thoroughly cleaned and dried. The viscometer was kept in Elite thermostatic water bath and temperature variation was maintained within  $\pm 0.1^\circ\text{C}$ . Each measurement, sufficient time was allowed to attain thermal equilibrium between viscometer and water bath. The accuracy of measurement was within  $0.11\%\text{Kgm}^{-1}\text{s}^{-1}$ . Different constant temperatures were maintained with the help of elite thermostatic water bath ( $\pm 0.1^\circ\text{C}$ ). For each measurement, sufficient time was allowed to attain thermal equilibrium.

Following ligands are used in the present study.

1. Ligand ( $L_5$ )
2. Ligand ( $L_6$ )

### Results and Discussion:

The viscosity of a liquid generally decreases with rise in temperature. The decrease is appreciable being about two% per degree rise of temperature in many cases. This has been explained in terms of 'hole theory' of liquids. According to this theory, there are vacancies or holes in a liquid. The liquid molecules keep on moving continuously into these vacancies also keep on moving around as otherwise the liquid will not be able to flow. This process however, requires energy. A liquid molecule, therefore, needs some energy to move into hole. As the energy becomes increasingly available at increasing temperature, a liquid can flow more easily at higher temperature. The coefficient of viscosity, thus, falls appreciably with rise in temperature as presented in Table 1 & 2.

The relationship between coefficient of viscosity of a liquid and temperature is expressed mathematically as –

$$\eta_r = Ae^{\Delta G/RT}$$

The graphs are plotted between  $\log \eta$  and  $1/T$ .

The thermodynamic parameters were calculated by using following expressions –

$$\Delta G = -2.303 R \times \text{slope}$$

$$\log \eta_{r1} - \log \eta_{r2} = [\Delta H/2.303] [1/T_1 - 1/T_2]$$

$$\text{and } \Delta S = (\Delta G - \Delta H) / T$$

These thermodynamic parameters for different systems are listed in Table 4





The positive and negative values of entropy indicate that reaction may be exothermic and endothermic respectively. Burghate et al<sup>17</sup> have also done thermodynamic studies in 70% dioxane-water. Arbad et al<sup>18</sup> and many workers<sup>19-23</sup> have also studied viscosity at different temperature.

**Table – 1 Determination of Relative Viscosities at different Temperatures**  
 System : Ligand (L<sub>5</sub>)      Conc : 0.01 M      Medium : 70% DMF-Water

Temp. °K	$\frac{1}{T} \times 10^{-3}$	Density $d \times 10^3$ (Kg.m <sup>-3</sup> )	$\eta_r = \frac{\eta}{\eta_0}$	log $\eta_r$
301.5	3.3167	0.9691	2.4318	0.3859
304.5	3.2841	0.9682	2.2653	0.3551
307.5	3.2520	0.9673	2.0992	0.3221
311.0	3.2154	0.9662	1.9373	0.2872
315.0	3.1746	0.9652	1.7604	0.2456

**Table – 2 Determination of Relative Viscosities at different Temperatures**  
 System : Ligand (L<sub>6</sub>)      Conc : 0.01 M      Medium : 70% DMF-Water

Temp. °K	$\frac{1}{T} \times 10^{-3}$	Density $d \times 10^3$ (Kg.m <sup>-3</sup> )	$\eta_r = \frac{\eta}{\eta_0}$	log $\eta_r$
301.5	3.3167	0.9697	2.4526	0.3896
305.5	3.2733	0.9682	2.2563	0.3534
309.5	3.2310	0.9670	2.1165	0.3256
313.5	3.1898	0.9654	1.9339	0.2864
317.5	3.1496	0.9638	1.8053	0.2566

**Table –3 Values of Thermodynamic Parameters**  
 Medium – 70% DMF - Water

Systems	$\Delta G$ (J mole <sup>-3</sup> k <sup>-1</sup> )	$\Delta H$ (J mole <sup>-3</sup> k <sup>-1</sup> )	$\Delta S$ (J mole <sup>-3</sup> k <sup>-1</sup> )
Ligand (L <sub>5</sub> )	-19147.142	18806.25702	123.2201
Ligand (L <sub>6</sub> )	-14770.6798	15082.1551	96.5469

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## Seasonal Variation in Physico-Chemical Parameters and Incidence of Pesticides Residues of Poha Dam Reservoir, Karanja (Lad), Dist. Washim (M.S.)

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### Abstract

*In the recent investigation, water samples are collected from various locations of Poha dam of Karanja (Lad) Tahsil Dist. Washim in Maharashtra state of India for observation of physico-chemical Parameters and Pesticide residues analysis during the year 2013. The invitro test of the collected water samples were performed for analysis of different parameters such as water temperature, pH, dissolved oxygen, total solids, total hardness, Conductance, Salinity and ORP and Organochlorine Pesticides. The obtained data were compared with standard units. The results of this recent study reveal that physico-chemical parameters are within maximum permissible limits of WHO. Therefore, water is safe and suitable for domestic, irrigation purposes and drinking purpose after some treatment.*

**Key Words:** Physico-chemical analysis, Pesticides, Poha dam.

### Introduction

The pesticides are chemical or biological substances that are designed to kill or retard the growth of pests interfering with the growth of crops, shrubs, trees, timber and other vegetation desired by humans. The term pesticide includes substances intended for use as plant growth regulators, defoliants, desiccants or agents for thinning fruit or preventing the premature fall of fruit. The substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport also come under the category of pesticides [1]. Pesticides are conventionally synthetic materials that directly kill or inactivate the pest. They are classified according to the type of organisms they act against as for example i) insecticides, ii) herbicides, iii) fungicides, iv) rodenticide and v) nematocides [2]. Insecticides include organophosphates (TEPP, parathion, trimesters of phosphates and phosphoric acids), carbamates (aldicarb), organochlorines (dichlorodiphenyltrichloroethane, chlordane, aldrin, dieldrin, lindane, endrin) and botanical insecticides (nicotine, rotenoids, pyrethrum). Herbicides are used to destroy other weeds that interfere with production of the desired crop. Based on their structure they are grouped into chlorophenoxy compounds (e.g.: 2,4-D, 2, 4,5-T), dinotrophenols like 2-methyl-4,6-dinitrophenol (DNOC), bipyridyl compounds like paraquat, carbamate herbicides, substituted urea, triazines and amide herbicides like alanine derivatives. Fungicides include a number of structurally different chemicals like captan, folpet, pentachlorophenolziram, nambam etc. Fungicides containing





mercury are known to cause nerve disorders. Rhodenticides are designed to kill rodents, mice, squirrels, gophers and other small animals. They vary from highly toxic one with the ability to kill an organism with one-time dose or less toxic ones requiring repeated ingestion over a period of time.

Even though pesticides play significant role in agriculture they are the most important environmental pollutants. This is due to their wide spread presence in water, soil, atmosphere and agricultural products. The effectiveness of pesticides, coupled with their relatively cheap cost encourages farmers to use more of these pesticides when growing their field crops. Yet, these pesticides pose severe risks to the farmers' health. Residues and metabolites of many Organochlorine pesticides are very stable with long half lives in the environment [3]. The pesticides' residues are discharged into the air and water. Through the consumption of foods containing these pesticides at a level of 0.1 µg/L, these residues can affect the human body [4]. The widespread use of pesticides may contaminate the environment and freshwater fish [5], which ultimately are consumed by humans. Moreover, moderate to severe respiratory and neurological damage can be caused by many of these compounds, which are genotoxic and carcinogenic [6]. Studies have shown that DDT is still in its highest concentration in biota of some areas. Many other recent works have indicated the presence of Organochlorine pesticides residues in surface waters, sediments, biota and vegetation [7-11].

Poha dam reservoir is located near about 3 kms from Poha village. This reservoir was built for irrigation purpose for farmers. Poha dam reservoir is an earthfill and rockfill reservoir. The determination of Organochlorine residues in water may give indication of the extent of aquatic contamination and accumulation characteristics of these compounds in the tropical aquatic biota that will help in understanding the behavior and fate of these persistent chemicals. This work, therefore, seeks to provide baseline information on levels of pesticides residues including DDT, DDE, Lindane, Endosulphone, Heptachlor and chlorodane in surface waters of Poha dam reservoir through four seasons that will assist in a scientific assessment of the impact of pesticides on public health, agriculture and the environment.

#### Methods and Materials

Water samples were taken from 0.3 m below the surface with a pre-cleaned glass bottle. For sampling turbulent midstream position of water bodies were chosen to approximate mean concentration of river water. All foreign bodies were removed and the samples were stored in ice during transport and were kept at 4°C in the laboratory until the solid phase extraction.

#### Sample extraction:

The procedure applied for the extraction of pesticides was similar to those reported by Laabs *et al* and Steinwandter. Water samples were extracted using ultrasonic extraction. Soxhlet extraction was done with 20 ml of hexane: dichloromethane (3:1) for 30 min. The extract was concentrated with the aid of rotator





evaporator. Pre-elution was carried out with the HPLC methanol. The concentration solvent extract was then analyzed for Pesticides.

The solvent of the mobile phase of the HPLC is methanol and water (1:1). This was prepared by measuring 250ml of HPLC grade methanol into a 500ml flask and made up with 250ml of distilled water. The HPLC model CECIL 1010 was switched on. The wavelength of the system was determined by using UV visible equipment. Little quantity of stock solution was diluted with methanol and its wavelength determined by scanning. A peak of 202nm was reached. The system wavelength was then set at 202nm and the sensitivity of the 0.05 nm of the UV detector component set. The flow rate was set at 1ml/min, afterwards, the purging of the system commenced by allowing the system to run for some time. The purging was carried out through a washing solution of 30% methanol, 70% water. Bubbling helium gas into the solution carried out degassing of the mobile phase was then set up and connected with HPLC system and allowed to run through the system of 20min.

Each sample residues was dissolved in 1ml methanol. The extracted residue was then loaded and injected into the valve of the chromatography system. The resulting chromatograph for each sample was printed out. The various retention times noted, concentration determined and recorded.

#### Result and Discussion

Poha dam reservoir is surrounded by farm lands. A large amount of chemicals (Fertilizers and pesticides) are used there by farmers which can enter the reservoir through running waters and subterranean canals. Also, garbage and wastewaters are poured in the reservoir by inhabitants. All of these factors may lead to the contamination of Poha dam reservoir.

Results from the study have been shown in Table no. 1 which is related to the concentration of Organochlorine pesticides residues in water, and Table no.2 is related to the physicochemical properties of water. The associated figure for mean concentration for pesticide DDT was in the range of 0.01-0.05µg/L. The ratio of incidence as well as concentration of DDE, a metabolite of DDT, in these water samples were lower than those of recorded for DDT. This observed trend could be attributed to the decomposition and bioaccumulation of the DDT used in the past. DDE is more stable than DDT and decomposes more slowly by micro-organisms, heat and ultraviolet rays. The pesticides chlorodane, Lindane and heptachlor were not detected in the water samples showing that the farmers around the reservoir do not use them in their farming activities. Endosulfan, a broad spectrum contact insecticide and acaricide, is another pesticide used by many farmers. The associated figure for mean concentration of Endosulfan was in the range of 0.01-0.0205µg/L.

Based on the ANOVA and Duncan tests, the mean concentration of Organochlorine pesticides in water samples of site I & site II showed significant differences. However, this was not observed in site I. Generally, the highest concentration of Organochlorine pesticides was seen at site I. It may be due to the





abundance of farm lands around this site which have sharp slopes toward this part of the reservoir so pesticides and other chemical material can enter there more easily. However lowest concentration of organochlorine residue was related to site III. Because there is a slow current toward this part and the contamination cannot accumulate there.

Organochlorine pesticides residues in the reservoir are likely to originate from nonpoint source via runoff, atmospheric deposition and leaching due to agriculture application and vector control practices. The lake sediments act as a sink for the persistent contaminants, whose resuspension during the reservoir's mixing may increase pesticides bioavailability and accumulation in the fishes. Pesticide pollution to the reservoir is therefore, likely to pose danger to both aquatic organism and humans.

Table 1: Levels of organochlorine pesticides in water samples of Poha dam reservoir.

Pesticide station	DDT			DDE			Endosulphone			Chlorodane			Lindane			Heptachlore		
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Summer season (2014)	.05	.04	.04	.06	.04	.04	.02	.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Winter season (2014)	.02	.03	.03	.04	.03	.02	.01	.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average mean	.035	.04	.04	.05	.035	.03	.00	.02	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Standard deviation	.015	.00	.00	.01	.00	.01	.015	.00	-	-	-	-	-	-	-	-	-	-
Range	.01-.05	.01-.04	.01-.04	.01-.04	.01-.06	.01-.04	.01-.02	.01-.02	-	-	-	-	-	-	-	-	-	-

The seasonal values of various physico-chemicals parameters of Poha dam reservoir water are given in Table 2. There is a close relation between the atmospheric temperature and water temperature. Air temperature is one of the most important ecological factor which controls the physiological behavior of aquatic systems and hence the quality of water. In the present investigation, the water temperature in an average of Poha dam reservoir was recorded in the summer and winter season was 23.12°C and 24.3°C respectively. pH is the measure of the concentration of hydrogen ions, which provides the range of the acidity or alkalinity of a solution. During the study period the average value of pH for summer season was found to be 7.6 and for winter season 7.5.





Table 2: Physicochemical properties of water samples of Poha dam reservoir.

Sites	PH		TDS (mg/L)		Conductance (M mhos)		Salinity (ppt)		DO (mg/L)		ORP (mV)		Temperature ( $^{\circ}$ C)	
	S	W	S	W	S	W	S	W	S	W	S	W	S	W
I	7.5	7.4	235	230	0.3	0.3	0.2	0.1	8.8	8.7	025	036	22.4	23.3
II	7.8	7.6	230	240	0.3	0.4	0.2	0.2	8.5	8.9	032	033	23.5	22.8
III	7.5	7.3	270	250	0.6	0.5	0.4	0.2	8.1	8.2	029	025	22.8	22.5
IV	7.6	7.9	220	230	0.2	0.3	0.1	0.1	8.2	8.4	028	030	23.8	24.1
Average	7.6	7.5	238.7	237.5	0.35	0.3	0.2	0.1	8.3	8.5	28.5	31	23.12	23.3

Dissolved oxygen content indicates the health and ability of water body to purify itself through biochemical processes. Oxygen is also needed for many chemical reactions that are important to lake functioning, such as oxidation of metals, decomposition of dead and decaying matters etc. During the study period average dissolved oxygen recorded in summer season was 8.3 mg/L and in winter season 8.5mg/L.

Total dissolved solids refer to matter suspended and dissolved in water. Waters with high total solids generally are of inferior palatability and may induce an unfavorable physiological reaction in the transient consumer [12]. In present investigation total dissolved solids in an average was in summer 238.7mg/l and in winter 237.5 mg/l. The conductance in present investigation sample in summer and winter was found to 0.35 M mhos & 0.3 M mhos. And the salinity was found to be 0.2 ppt and 0.1ppt sol. for winter and summer seasons.

### Conclusion

The analysis of water quality parameters of Poha dam reservoir showed that the values are well within the permissible limits. The result of study reveals that the quality of dam water is though fit for domestic, irrigation purpose and also for drinking purpose after some treatment need continuous monitoring of physico-chemical parameters to improve the quality of water.

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## Assessment of Water Quality in the River Purna, District-Akola, Maharashtra

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### Abstract

*Present study deals with the pollution of Purna River water near Gandhigram village with special emphasis on the pollutants originated from the human domestic activities and wrong way of agricultural practices. Large amount of organic pollutants enters in the River flow that alters the water quality parameters. The effect of pollution mainly comes in the sight during summer season. It increase the temperature of water, lowers the dissolved oxygen contents, increases the biochemical oxygen demand, total dissolved solids, ionic contents and resulted in to eutrophication in River water. The daily input of organic pollutants in River water by human domestic practices on the bank of River, such as washing of utensils, cloth washing cattle washing on the bank of River, deteriorate the River water. During summer the condition becomes more miserable that the River basin agriculture contributes the decaying organic pollutants to the River water and increases the physical and chemical parameters in water.*

Key Words – Pollutants, Parameters, human activities, River basin agriculture.

### Introduction:

Water quality of receiving water bodies such as Rivers and lakes is critically important because it is one of the most essential resources for human existence and settlement. However, rapid growth of population and increase of urban activities significantly influences the water quality of receiving water bodies<sup>1</sup>. This is mainly due to the deterioration of water quality due to the higher pollutant loads resulting from various point and non-point sources of pollution.

As noted by several researchers, point source of pollution primarily includes direct and uncontrolled discharges from different land use types such as residential, industrial and commercial land uses<sup>1</sup>. On the other hand urban storm water runoff has been recognized as the most important non-point source of pollution to receiving water bodies<sup>1,2</sup>. Of all the planet's renewable sources, water has a unique place. It is essential for sustaining all forms of life, food production and economic development and for general well being. Due to tremendous increase of human population and the domestic activities of the peoples related to water, the aquatic ecosystem perceptibly altered in several aspects in recent years. Water is regarded as a polluted when it is changed in its quality or compositions directly or indirectly as a result of human activities, so that it become less suitable for drinking as well as domestic and other purposes. Many of





the Rivers and lakes are becoming increasingly murky, smelly and choked with growth of algae. Most of the Rivers have become darkened with sewage, effluents, agricultural runoff etc. Natural waters are no longer capable of composing these impurities.

Natural water has a self purification capacity, as the polluted River water get cleaned along the stretch by settling down the solids and biodegradation of organic wastes. But it has its own limit. The conservation and efficient utilization of available water resources need maximum emphasis.

#### **Material and Methods:**

The water quality data for this study was collected on a stretch of 3 km along the Purna River. These locations have been selected in order to represent the different land use characteristics in to understand the variability of water quality with the inherent characteristics of different land uses. A work plan was conceived for the present investigation, to study the water quality of Purna River in the vicinity of Gandhigram town. Gandhi gram town is located within Akola district, 15 Kms north from Akola (Maharashtra), in central India, on the bank of Purna River. To assess the quality of River water and impact of human activities on the water quality and also to gain the information about the extent of pollution the proposed work is aimed at devising ecologically sound new strategies for conservation of River through prevention of pollution emphasizing appraisal of environmental status of River, by studying physicochemical parameters and to determine causes of pollution.

All the samples collected were then tested for range of physical, chemical and biological water quality parameters according to the specified by Standard Methods for Examination of Water and Wastewater (APHA, 2001)<sup>3</sup>. This includes five water quality parameters namely TDS, pH, Electrical Conductivity (EC), Dissolved Oxygen, Biochemical Oxygen Demand (BOD)

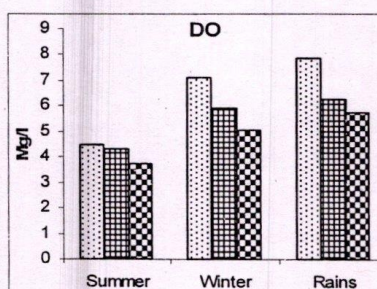
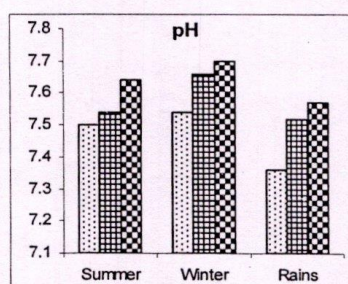
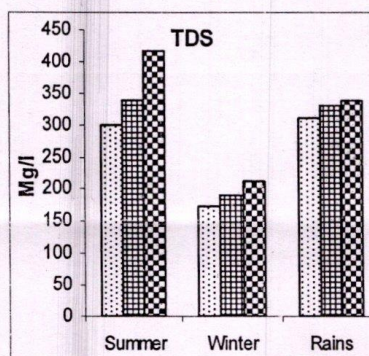
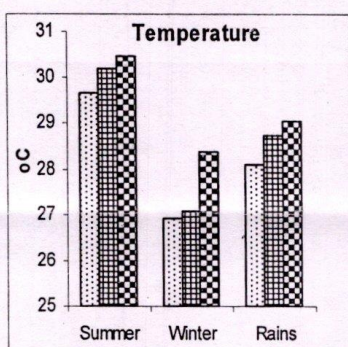
The collection of water sample from different stations and depths of River was done by Mayer's sampler every week. Three sampling stations were selected in the vicinity of Gandhigram to collect the water samples, namely upstream station 'X', water sampling near the bridge is station 'Y' and downstream of bridge station 'Z'. The analysis for temperature, pH, conductivity and dissolved oxygen were performed in the field by using "PorTable Water Analysis Kit" manufactured by 'Electronix India, Ajmer', having COMS – LSI technology, with accuracy of  $\pm 2.0$  %. The data obtained from the laboratory testing was then analyzed using two sophisticated software packages available for the statistical data analysis namely Microsoft Excel 2010 and StatistiXL Version 1.9.<sup>3</sup>



### Observations:

Table 1 Variation of different parameters of Purna River water

Season	Station	Temp. °C	TDS. (mg/l)	pH	DO. (mg/l)	BOD. (mg/l)	COND. (µmho/cm)
Summer	X	33.63	289	7.4	4.52	12.92	399.04
	Y	29.21	3274	8.42	4.3	40.05	585.42
	Z	30.47	417	7.64	3.73	44.01	602.77
Winter	X	27.13	165	7.48	6.13	8.37	320.11
	Y	25.19	171	7.36	6.03	25.09	423.43
	Z	27.77	211	7.5	4.93	30.08	511.55
Rains	X	28.19	245	7.26	7.63	24.99	314.07
	Y	28.7	329	7.52	6.87	29.23	426.78
	Z	29.24	347	7.47	5.74	35.54	437.07





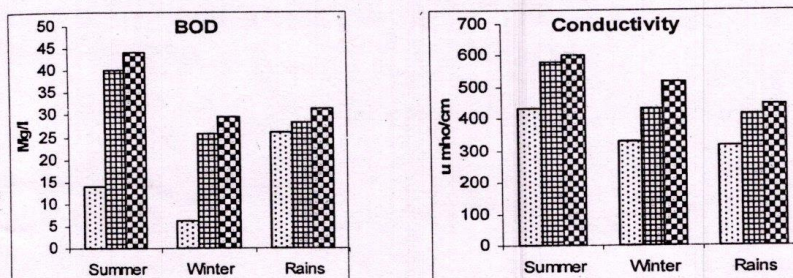


Fig. 1 Seasonal variations of parameters in Purna River

### Results and Discussion:

Perusal of data harvested during the study period indicates that the temperature of River water at sampling stations varies according to the extent of organic pollution and the flow of River. The organic pollution load at station 'Y' and 'Z' by human domestic activities and agricultural farming in the River basin, increase the temperature of water<sup>4,9</sup>. Increasing bio-decomposition reactions involves the production of heat, which may be responsible to increase the temperature at sampling stations 'Y' and Z. There is no significant source of pollution at station 'X', hence recorded comparatively lower values of temperature<sup>5</sup>. Use of cow dung manure in the crop fields of watermelon and muskmelon, present in the open sand at middle part of River basin resulted in to increase of phytoplankton population and eutrophication. Hence, the continuous addition of organic matter by manuring the crop fields, cattle washing and daily washing of utensil and clothing's by the locality residing on the bank of River, contributes to enhance the microbial activities in the River water at station 'Z'. That intern increase the depletion of dissolved oxygen from the water and increase the biochemical oxygen demand of water. While at water pumping station 'Z', the bathing, cattle activities and entry of organic manure in the water lowers the values of dissolved oxygen. During the months of February and March, intense sunlight enhances the rate of photosynthesis of aquatic vegetation and increased temperature of water in summer days enhance the rate of microbial degradation of organic matter in River water, which resulted in to depletion of dissolved oxygen from water<sup>6,10</sup>.

During post summer days the less flow of River offers more concentration of pollutants to the water may attribute to increase of carbonates and bicarbonates. On the other hand turbid water due to load of pollutants, lowers the rate of phytoplanktonic activities and their assimilation of carbon dioxide and bicarbonates also, which may be responsible to increase the hydrogen ion concentration of water and alkalinity. During winter days, clear water and abundance of aquatic flora and their moderate rate of photosynthetic activities enhance the assimilation of bicarbonates from water, may attributed to





comparatively lower values of hydrogen ion concentration in River water<sup>7</sup>. During rainy season surface runoff having eroded soil and organic matter from catchment areas maintains the increased pH of water. Total dissolved solid contents increased during the summer months, which may be due to less flow of River offer the high concentration pollutants to the River water<sup>8,11</sup>. Comparatively more water during the winter months, dilute the pollutants and recorded lower values of TDS. Eroded soil and surface runoff from catchments transfers enormous amount of dissolved solids in the River with rain water, hence the peak values of TDS were recorded during the rainy season. Peak values of conductivity at polluted stations in summer may be attributed to inflow of organic matter by human activities enhance the ionic status of River water. At station 'X' the degradation of bottom sediments maintains the values of conductivity. During the winter months growth of aquatic flora and their assimilation and dilution of pollutants in moderate flow of River water resulted in to lower the conductivity of water at all sampling stations.<sup>7,9</sup>

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## Novel Synthesis of 2, 3 Disubstituted Methylene Furan Quinoxaline From Disubstituted Acetophenone and Its Biological Activity

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### Abstract

Quinoxaline well knew for their antibacterial<sup>1</sup>, antitumor and antiviral<sup>2</sup> properties. Earlier workers have reported various aziridinyl ketones and their cyclic anils by reaction of chalcone dibromide with benzene<sup>1</sup>, 2- diamine in presence of triethyl amine and their subsequent acid catalyzed isomerisation to quinoxaline<sup>3</sup>. Similarly 2-monoalkylamino and 2-dialkylamino-4-phenyl benzodiazepines are also reported<sup>4</sup>. Formation of novel Schiff base containing tricyclic (7+12+7) inner ring system has also been reported<sup>5</sup> in this reaction. Chalcone dibromide condensed with hydrogen peroxide in alkaline methanol or dioxane gives aurone epoxide which on ring opening gives 2,β aurone isomeric with 1,2 diketone structure<sup>6</sup> which condensed with BDA give 2,3 disubstituted quinoxaline.

### Introduction

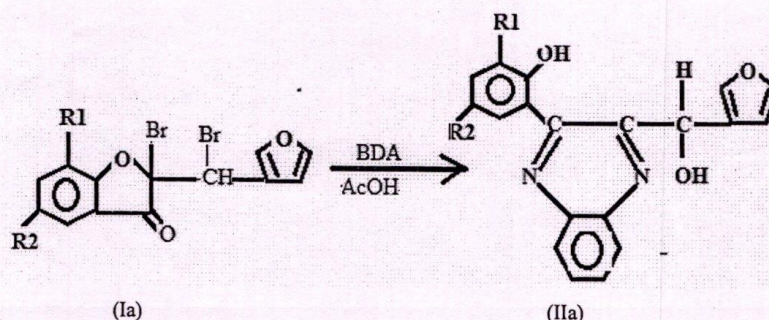
1,2-dihydro-quinoxaline-2-one and its derivatives represent quite large group of quinoxaline derivatives. The review of its chemistry has not been published yet. Some information's about 1,2-dihydro-quinoxaline-2-one and its derivatives can be found in summary reviews of the quinoxaline chemistry<sup>7</sup>. Numerous methods are available for the synthesis of quinoxaline derivatives which Extensive researches have generated numerous synthetic approaches for the construction of the skeleton of such heterocycles. Among these methods, the most widely used one relies on the condensation of aryl-1, 2- diamines with aryl ketones, usually α-dicarbonyl compounds or their equivalents [12]. Recent improvements on these conditions were reported via solid-phase [13], oxidative coupling of epoxides with ene-1, 2-diamines [14]. Improved methods have been reported via a condensation process catalyzed by CAN [15], molecular iodine as a catalyst [16], manganese octahedral molecular sieves [17], task-specific ionic liquid [18], from PEG [19], from IBX [20], from PbO [21], from ZrO<sub>2</sub> [22], from galactose [23]. Recently, a number of catalysts have been reported for the synthesis of quinoxalines. Considering the significant applications in the fields of medicinal, industrial and synthetic organic chemistry, there has been tremendous interest in developing efficient methods for the synthesis of quinoxalines.<sup>8</sup>

### Experimental Method

2-α-dibromo-2-(2'-methylene furan)-5, 7 substituted coumaran-3-one (Ia), (0.01 mole) and benzene 1,2 diamine (0.01 mole) was dissolved in 25ml methanol few drops of concentrated H<sub>2</sub>SO<sub>4</sub> was added to it. The mixture was refluxed for 3Hr allow to cool diluted with cold water with constant stirring. Resulting



solid was extract with diethyl ether to affords 2-(2'-hydroxy-3'-nitro-5'-chloro phenyl)-3-( $\alpha$ '-hydroxy-2"-methylene furan) quinoxaline. (IIa) All melting points were measured in melting point apparatus and were uncorrected. The structural elucidations of compounds were done on the basis of analytical and spectral data.



$R_1 = \text{NO}_2$  &  $R_2 = \text{Cl}$

#### Properties of the compound (IIa):-

It is yellowish green crystalline solid, m.p  $143^\circ\text{C}$ . It shows positive ferric chloride test, indicating the presence of phenolic hydroxyl group. IR spectrum was recorded on Perkin-Elmer 557 spectrophotometer; 3500-3400(broad-OH group stretching); 1645 (singlet  $\text{C}=\text{N}$  stretching); 1589 (symmetrical aromatic  $\text{NO}_2$  group); 1348(unsymmetrical aromatic  $\text{NO}_2$  group); 1022( $\text{OCH}_3$  group stretching);  $764\text{ cm}^{-1}$  ( $\text{C}-\text{Cl}$  group stretching).

The PMR was recorded in  $\text{CDCl}_3$  with TMS as an internal standard; 0.99  $\square$  (1H, -OH); 1.15  $\square$  (1H, -OH); 3.51  $\square$  (3H, aromatic  $\text{OCH}_3$ ); 4.86  $\square$  (1H, -CH); 7.23 – 7.80  $\square$  (10H, aromatic H).

This chemical and spectral data shows that the compound (IIa) is 2-(2'-hydroxy-3'-nitro-5'-chloro phenyl)-3-( $\alpha$ '-hydroxy-2"-methylene furan) quinoxaline.

Similarly other compounds (IIa-d) were prepared by above method and reported in the Table.

Synthesis, m.p. and yields of disubstituted quinoxaline

Comp.No.	$R_1$	$R_2$	M.P. $^\circ\text{C}$	% yield
IIa	$\text{NO}_2$	Cl	143	76
IIb	Cl	Cl	156	68
IIc	Br	Cl	138	81
IId	H	Cl	110	70





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AMERICAN JOURNAL OF  
PHARMTECH RESEARCHJournal home page: <http://www.ajptr.com/>**Synthesis of 3,4-Diylidine and N-Substituted Pyrrolidines and its Anti-Microbial Activity**Sanjay P. Wagh<sup>1\*</sup>*1. Department of Chemistry, Shri. Shivaji Arts, Commerce and Science, Akot, Akola, M.S. India.***ABSTRACT**

The synthesis of Nitrogen containing heterocycles particularly substituted pyrrolidines constitutes very important moieties of many biologically active molecules<sup>1</sup> including natural and non-natural substances. The synthesis of functionalized pyrrolidines continues to attract interest, both for their synthetic challenges,<sup>2</sup> and also their value in synthetic chemistry<sup>3</sup> and their diverse biological properties.<sup>4</sup> The present work includes the synthesis of substituted pyrrolidines from alkyl dihalide and primary amines by simple and efficient cyclocondensation process. This methodology gives varies of substitution pattern on 2,3-position of the pyrrolidines<sup>5</sup> Scheme 1. This strategy improved greener synthetic methodology and worked out as a simple and straightforward one-pot approach for the synthesis nitrogen containing heterocycle as pyrrolidines.

**Keywords:** Pyrrolidine, Heterocyclic compound, Dihalide.

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## INTRODUCTION

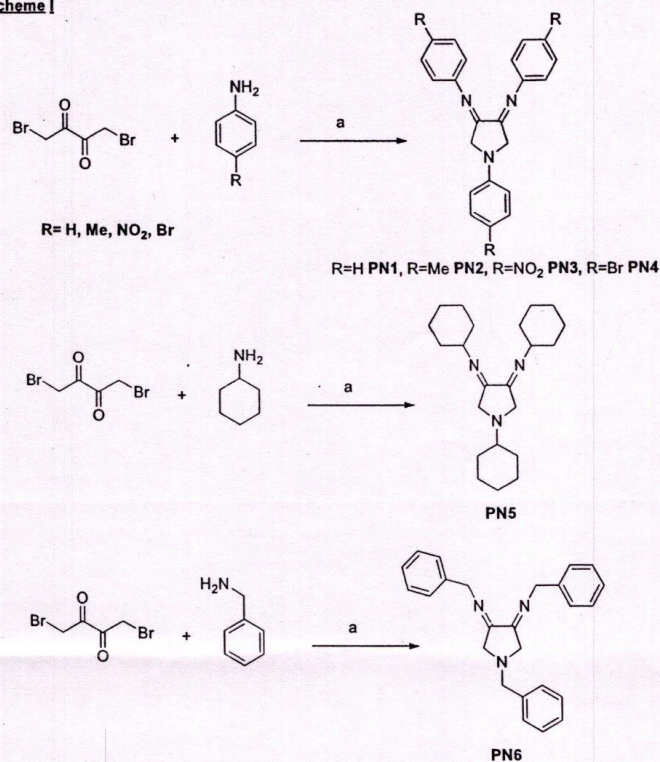
The radical and cycloaddition<sup>6</sup> strategies have been widely used to access synthesis of substituted pyrrolidine, effective metal-mediated<sup>7</sup> and organocatalytic<sup>8</sup> ring closing strategies have been developed in recent years. Although the manipulation of pre-existing nitrogen heterocycles has been a very successful strategy to access functionalized pyrrolidin(on)es,<sup>9</sup> particularly starting from pyroglutamic acid<sup>10</sup> it has also been found that approaches based upon ring closure using radical,<sup>11</sup> cycloaddition,<sup>12</sup> Dieckman<sup>13</sup> and aldol<sup>14</sup> processes are also highly effective. It is very unusual to see amongst these cyclisation strategies, sequences which proceed via closure on nitrogen, but it had been reported some time ago that ring closure onto a nitrogen bearing a good leaving group provided rapid and direct access to pyrrolidines,<sup>15</sup> although interestingly this strategy has not been widely adopted; a similar strategy has recently been used to access pyrazoles<sup>16</sup> by ring closure. In our approach the synthesis of 3,4-diylidine substituted pyrrolidines from 1,4-dibromobutane- 2,3-dione and aromatic amines as well as the aliphatic amine by simple and efficient cyclocondensation in presence of Cesium carbonate as base in water and diglyme solvent. This methodology gives varies of substitution pattern on 2,3 positions of the pyrrolines<sup>5</sup> by using required primary amine Scheme 1. This strategy improved greener synthetic methodology and worked out as a simple and straightforward one-pot approach for the synthesis nitrogen containing heterocycle as substituted pyrrolidines.

## MATERIALS AND METHOD

All the Chemicals used in the synthesis of the compounds were obtained from Merck, Sigma-Aldrich and were of analytical grade. Purity of the compounds was checked by Thin Layer Chromatography using silica gel as stationary phase and combination of Ethyl acetate:Petrol as mobile phase. The IR, NMR, Mass spectra of the synthesized compounds were recorded for the characterization from the University of Mumbai and Indian Institute of Technology (IIT) Mumbai and TIFR Mumbai. All the synthesized compounds were screened for their antimicrobial activities by drug diffusion method by preparing the discs of the drug.



Scheme 1



Reagent and Conditions: Cs<sub>2</sub>CO<sub>3</sub> in water and diglyme, reflux for 5 to 10 hrs and reaction monitored by TLC

Figure 1: Nucleophilic condensation

## RESULTS AND DISCUSSION

### General Procedure

When dihalide (1,4-Dibromobutane-2,3-dione) (1eq.) was added to a well stirred mixture of primary amine (Aromatic and Aliphatic) (3 eq.) and Cs<sub>2</sub>CO<sub>3</sub> (2 eq.) in water:diglyme (1:1) as solvent. The reaction mixture was reflux for 5 to 10hrs and reaction progress was monitored by TLC. Reaction mixture was pour in to water and product was extracted by ethyl acetate and dried over brine and anhydrous Na<sub>2</sub>SO<sub>4</sub>, concentration of the organic layer gave the crude product, which was purified by Column chromatography (eluting with ethyl acetate: petrol) to afford the product as substituted pyrrolidines.

Synthesis of N,N'-(1-phenylpyrrolidine-3,4-diylidene)dianiline, PN1(scheme 1)



A mixture of 1,4-Dibromobutane-2,3-dione 1.0g (4.1 mmol), distilled aniline 1.2g (12.3 mmol) and cesium carbonate 1.6g (8.2 mmol) in water:diglyme was refluxed for 5hrs and the reaction progress was monitored by TLC. After completion of reaction the product PN1 was obtained by chromatography purification.

**PN1 compound, Yield** = (890mg, 67% as pale yellow colored) **IR (KBr):** 1620  $\text{cm}^{-1}$  (N=C), 2979  $\text{cm}^{-1}$  (C-H), 1230  $\text{cm}^{-1}$  (C-N), 1450-1600  $\text{cm}^{-1}$ , 3070  $\text{cm}^{-1}$  Aromatic ring.  **$^1\text{H}$  NMR :**  $\delta$  3.4 (s, 4H, C<sub>2</sub> and C<sub>5</sub>-CH<sub>2</sub>),  $\delta$  6.8,  $\delta$  6.9,  $\delta$  7.0,  $\delta$  7.3,  $\delta$  7.5 (m, 15ArH).  **$^{13}\text{C}$  NMR :**  $\delta$  54,  $\delta$  111,  $\delta$  119,  $\delta$  121,  $\delta$  128,  $\delta$  129,  $\delta$  130,  $\delta$  147,  $\delta$  152,  $\delta$  159. **Mass m/z** = C<sub>22</sub>H<sub>19</sub>N<sub>3</sub><sup>+</sup>, HRMS (ESI<sup>+</sup>) 325.1476.

**Synthesis of N,N'-(1-(p-tolyl)pyrrolidine-3,4-diylidene)bis(4-methylaniline), PN2**

A mixture of 1,4-Dibromobutane-2,3-dione 1.0g (4.1 mmol), p-toluidine 1.3g (12.3 mmol) and cesium carbonate 1.6g (8.2 mmol) in water:diglyme was refluxed for 5hrs and the reaction progress was monitored by TLC. After completion of reaction the product PN2 was obtained by chromatography purification.

**PN2 compound, Yield** = (1.1g, 73% as pale yellow colored) **IR (KBr):** 1624  $\text{cm}^{-1}$  (N=C), 2985  $\text{cm}^{-1}$  (C-H), 1200  $\text{cm}^{-1}$  (C-N), 1400-1600  $\text{cm}^{-1}$ , 3050  $\text{cm}^{-1}$  Aromatic ring.  **$^1\text{H}$  NMR :**  $\delta$  2.4, (s, 9H, 3CH<sub>3</sub>),  $\delta$  3.4 (s, 4H, C<sub>2</sub> and C<sub>5</sub>-CH<sub>2</sub>),  $\delta$  6.7,  $\delta$  7.1,  $\delta$  7.3,  $\delta$  7.4 (d, J 7.4Hz, 12ArH).  **$^{13}\text{C}$  NMR:**  $\delta$  22,  $\delta$  54,  $\delta$  113,  $\delta$  122,  $\delta$  130,  $\delta$  131,  $\delta$  137,  $\delta$  144,  $\delta$  148,  $\delta$  159. **Mass m/z** = C<sub>25</sub>H<sub>25</sub>N<sub>3</sub><sup>+</sup>, HRMS (ESI<sup>+</sup>) 367.1174.

**Synthesis of N, N'-(1-(4-nitrophenyl)pyrrolidine-3,4-diylidene)bis(4-nitroaniline), PN3**

A mixture of 1,4-Dibromobutane-2,3-dione 1.0g (4.1 mmol), p-Nitroaniline 1.7g (12.3 mmol) and cesium carbonate 1.6g (8.2 mmol) in water:diglyme was refluxed for 5hrs and the reaction progress was monitored by TLC. After completion of reaction the product PN3 was obtained by chromatography purification.

**PN3 compound, Yield** = (800mg, 42% as yellow semisolid) **IR (KBr):** 1640  $\text{cm}^{-1}$  (N=C), 2980  $\text{cm}^{-1}$  (C-H), 1210  $\text{cm}^{-1}$  (C-N), 1390, 1560  $\text{cm}^{-1}$  (-NO<sub>2</sub>), 1400-1600  $\text{cm}^{-1}$ , 3050  $\text{cm}^{-1}$  Aromatic ring.  **$^1\text{H}$  NMR :**  $\delta$  3.4 (s, 4H, C<sub>2</sub> and C<sub>5</sub>-CH<sub>2</sub>),  $\delta$  6.9,  $\delta$  7.0,  $\delta$  8.0,  $\delta$  8.1 (d, J=7.3Hz, 12ArH).  **$^{13}\text{C}$  NMR :**  $\delta$  54,  $\delta$  112,  $\delta$  123,  $\delta$  125,  $\delta$  126,  $\delta$  138,  $\delta$  147,  $\delta$  154,  $\delta$  159. **Mass m/z** = C<sub>22</sub>H<sub>16</sub>N<sub>6</sub>O<sub>6</sub><sup>+</sup>, HRMS (ESI<sup>+</sup>) 460.1072.

**Synthesis of N, N'-(1-(4-bromophenyl)pyrrolidine-3,4-diylidene)bis(4-bromoaniline), PN4**

A mixture of 1,4-Dibromobutane-2,3-dione 1.0g (4.1 mmol), p-Bromoaniline 2.1g (12.3 mmol) and cesium carbonate 1.6g (8.2 mmol) in water:diglyme was refluxed for 5hrs and the reaction progress was monitored by TLC. After completion of reaction the product PN4 was obtained by chromatography purification.



**PN4 compound**, Yield = (1.3g, 57% as semisolid) **IR (KBr)**: 1644  $\text{cm}^{-1}$  (N=C), 2985  $\text{cm}^{-1}$  (C-H), 1215  $\text{cm}^{-1}$  (C-N), 1400-1600  $\text{cm}^{-1}$ , 3075  $\text{cm}^{-1}$  Aromatic ring.  $^1\text{H NMR}$ :  $\delta$  3.4 (s, 4H, C<sub>2</sub> and C<sub>5</sub>-CH<sub>2</sub>),  $\delta$  6.7,  $\delta$  7.3,  $\delta$  7.4,  $\delta$  7.7 (d, J=7.5Hz, 12ArH).  $^{13}\text{C NMR}$ :  $\delta$  54,  $\delta$  116,  $\delta$  117,  $\delta$  122,  $\delta$  123,  $\delta$  132,  $\delta$  133,  $\delta$  146,  $\delta$  151,  $\delta$  159. Mass  $m/z$  =  $\text{C}_{22}\text{H}_{16}\text{Br}_3\text{N}_3^+$ , HRMS (ESI<sup>+</sup>) 562.1132.

**Synthesis of N,N'-(1-cyclohexylpyrrolidine-3,4-diylidene) dicyclohexanamine, PN5**

A mixture of 1,4-Dibromobutane-2,3-dione 1.0g (4.1 mmol), p-Bromoaniline 1.2g (12.3 mmol) and cesium carbonate 1.6g (8.2 mmol) in water:diglyme was refluxed for 5hrs and the reaction progress was monitored by TLC. After completion of reaction the product **PN5** was obtained by chromatography purification.

**PN5 compound**, Yield = (900mg, 64% as colorless liquid) **IR (KBr)**: 1630  $\text{cm}^{-1}$  (N=C), 2985, 2964  $\text{cm}^{-1}$  (C-H), 1215  $\text{cm}^{-1}$  (C-N).  $^1\text{H NMR}$ :  $\delta$  1.1-  $\delta$  1.2 (CH<sub>2</sub>),  $\delta$  1.4-  $\delta$  1.5 (CH<sub>2</sub>),  $\delta$  1.4-1.6 (CH<sub>2</sub>),  $\delta$  1.5-1.7 (CH<sub>2</sub>),  $\delta$  1.7-1.9 (CH<sub>2</sub>),  $\delta$  2.4 (s, 4H, C<sub>2</sub> and C<sub>5</sub>-CH<sub>2</sub>),  $\delta$  2.6 (CH),  $\delta$  4.9 (CH).  $^{13}\text{C NMR}$ :  $\delta$  24,  $\delta$  25,  $\delta$  26,  $\delta$  32,  $\delta$  33,  $\delta$  51,  $\delta$  56,  $\delta$  71,  $\delta$  158. Mass  $m/z$  =  $\text{C}_{22}\text{H}_{37}\text{N}_3^+$ , HRMS (ESI<sup>+</sup>) 343.1592.

**Synthesis of N, N'-(1-benzylpyrrolidine-3,4-diylidene)bis(1-phenylmethanamine), PN6**

A mixture of 1,4-Dibromobutane-2,3-dione 1.0g (4.1 mmol), p-toluidine 1.3g (12.3 mmol) and cesium carbonate 1.6g (8.2 mmol) in water:diglyme was refluxed for 5hrs and the reaction progress was monitored by TLC. After completion of reaction the product **PN6** was obtained by chromatography purification.

**PN6 compound**, Yield = (1.3g, 80% as pale yellow colored) **IR (KBr)**: 1622  $\text{cm}^{-1}$  (N=C), 2980  $\text{cm}^{-1}$  (C-H), 1220  $\text{cm}^{-1}$  (C-N), 1400-1600  $\text{cm}^{-1}$ , 3060  $\text{cm}^{-1}$  Aromatic ring.  $^1\text{H NMR}$ :  $\delta$  2.4 (s, 4H, C<sub>2</sub> and C<sub>5</sub>-CH<sub>2</sub>),  $\delta$  2.7 (2CH<sub>2</sub>N),  $\delta$  3.7 (CH<sub>2</sub>N),  $\delta$  7.2-7.5 (m, 15ArH).  $^{13}\text{C NMR}$ :  $\delta$  53,  $\delta$  64,  $\delta$  126,  $\delta$  127,  $\delta$  128,  $\delta$  129,  $\delta$  130,  $\delta$  132,  $\delta$  139,  $\delta$  158. Mass  $m/z$  =  $\text{C}_{25}\text{H}_{25}\text{N}_3^+$ , HRMS (ESI<sup>+</sup>) 367.1204.

**Antimicrobial Activity**

The all synthesized substituted pyrrolidines including PN1, PN2, PN3, PN4, PN5, PN6 were tested for their antimicrobial activities<sup>17</sup> by drug diffusion method by preparing the discs of the drug. The activity was tested with *Staphylococcus aureus* (Gram positive), *Salmonella typhi* and *Escherichia coli* (Gram negative) bacterial strains taking Streptomycin, Ciprofloxacin and Cloxacillin as standard drugs. Further all antimicrobially active compounds were tested to find their minimal inhibitory concentration (MIC); using (50  $\mu\text{g/ml}$ ), (100 $\mu\text{g/ml}$ ), (150 $\mu\text{g/ml}$ ), (200 $\mu\text{g/ml}$ ) concentrations.



Table 1: Antibacterial activity of compounds PN1, PN2, PN3, PN4, PN5, PN6.

Compd No.	Zone of inhibition in mm											
	<i>E. coli</i>				<i>S. typhi</i>				<i>S. aureus</i>			
	50 µg	100 µg	150 µg	200 µg	50 µg	100 µg	150 µg	200 µg	50 µg	100 µg	150 µg	200 µg
PN1	13	16	18	22	10	12	15	16	09	12	16	18
PN2	14	15	17	19	11	12	16	18	10	14	17	18
PN3	15	17	20	27	10	12	14	19	12	13	17	19
PN4	14	18	20	28	11	14	17	20	11	13	16	19
PN5	12	14	17	22	10	13	15	18	10	13	15	19
PN6	13	17	19	24	10	14	16	19	10	13	14	17

Disc size: 6.35 mm; standard: streptomycin; control: DMSO; duration: 24 h. resistant (< 11 mm), intermediate (14 mm), sensitive (>15 mm).

### CONCLUSION

This is the efficient one pot greener synthesis of the substituted pyrrolidines and the antibacterial screening data concluded that the all compounds PN1-PN6 showed activity against gram negative microorganisms as well as gram positive organisms. The compounds having the nitro- and bromo- as substituent showed little more activity as compared to the other. The zones of inhibition were found to at 28 mm, 20 mm and 19 mm as the highest inhibition zone against *E. coli*, *S. typhi* and *S. aureus* with concentration 200 µg.

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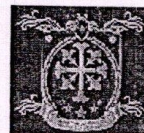


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## Development of n-type CdS and ZnS Nanostructured Semiconductors for Solar Cell Applications

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**Abstract:** We deposit n-type CdS & ZnS semiconductor films on different substrates by simple and inexpensive chemical bath deposition technique (CBDT). We record X-ray diffraction pattern and SEM of the developed samples. It is found that, the average grain size for CdS & ZnS film is in between 24nm and 65nm. It is observed that the energy band structure and band gaps get changed because of the change in the grain size of the sample in the films. The physical conditions were kept identical while growing all the samples. We predict that the difference in grain size of CdS and ZnS in thin films may be because of the binding energy of cadmium and zinc in the molecules of CdSO<sub>4</sub> and Zn(CH<sub>3</sub>COO)<sub>2</sub>. The investigation of the effect of the technique of synthesis on the grain size and the effect of grain size on the properties of semiconductor is under consideration.

**Keywords:** cadmium sulfide, zinc sulfide, nanostructured thin films, CBD.

### 1 Introduction

Zinc and cadmium sulfide are compound semiconductors with a wide range of potential applications. These materials have many similarities; both exist in cubic or hexagonal forms and are wide- direct-band gap semiconductors. The CdS / ZnS is an excellent material used with the semiconductor cadmium telluride to fabricate solar cells given its optimal band gap energy (2.42 eV) for optical windows, while great importance in the optoelectronic applications and a diverse range of applications for thin films of this semiconductor including as waveguides, heterojunction devices and in thin-film electroluminescent displays in which it is the most commonly used host material. The potential of ZnS layers in blue light-emitting diodes (LEDs) and laser diodes is also an area which is well documented. Applications in opt electric methods or photovoltaic devices is another area receiving attention. In CdS based solar cells, the use of wider bandgap materials such as ZnS or CdZnS could lead to decreases in window absorption losses and improvements in the short circuit current of the cells.

In this work we developed the ZnS and CdS n-type semiconductor thin films having a nanometer grain size by using Chemical Bath Deposition (CBD) Technique. The (CBD) is one of the most convenient, reliable, simplest, inexpensive method and useful for large area industrial applications as

well as preparation of thin film at close to room temperatures. The technique of CBD involves the controlled precipitation from solution of a compound on a suitable substrate. The technique offers many advantages over the more established vapor phase synthetic routes to semiconductor materials, such as CVD, MBE and spray pyrolysis. Factors such as control of film thickness and deposition rate by varying the solution pH, temperature and reagent concentration are allied with the ability of CBD to coat large areas, in a reproducible and low cost process. Another advantage of CBD method with respect to other methods is that the films can be deposited on different kinds, shapes and sizes of substrates. [1, 2]

### 2 Experimental details

Thin films of CdS / ZnS were deposited from a solution of analytical grade CdSO<sub>4</sub> (Cadmium Sulphate) / Zn(CH<sub>3</sub>COO)<sub>2</sub> (Zinc Acetate) a Cd<sup>++</sup> / Zn<sup>++</sup> ion source and Thiourea as a S<sup>-</sup> ion source in an alkaline solution of Ammonia. Commercial glass slides, used as substrates, were cleaned in acetone and methanol ultrasonically, and finally, again washed with methanol ultrasonically before use. Well cleaned glass slides were kept vertically in a closed beaker with the help of a special holder which is attached to a motor having a constant speed of 60 r.p.m. We have double distilled water in a beaker



and then added  $\text{CdSO}_4 / \text{Zn}(\text{CH}_3\text{COO})_2$  of particular molarity as a  $\text{Cd}^{++} / \text{Zn}^{++}$  ion source slowly under Magnetic stirring. Ammonia solution is used for adjusting the pH which is measured on pH meter. Thiourea ( $\text{SC}(\text{NH}_2)_2$ ) solution of particular molarity was slowly poured into the solution only when the appropriate temperature i.e.  $60^\circ\text{C}$  was reached. Finally the temperature was kept constant with the help of a temperature controller in the range  $70^\circ\text{C}$  to  $72^\circ\text{C}$ . The time for deposition was varied from 10 min. to 60 min. After the deposition, the CdS / ZnS films were washed with methanol ultrasonically to remove the loosely adhered CdS / ZnS particles on the film and finally dried in air. The similar procedure is repeated for different deposition time. [3, 4]

The crystallographic structure of films was analyzed with a diffractometer (XPRT-PRO) by using Cu-K $\alpha$  lines ( $\lambda = 1.54 \text{ \AA}$ ). The average grain size in the deposited films was obtained from Debye-Scherrer's formula.

### 3 Results and discussion

#### 3.1 Structural properties

Fig 1 shows the XRD pattern of CdS/ZnS thin films for varying film thickness. The sharp peaks show good crystalline films with nanometer size.

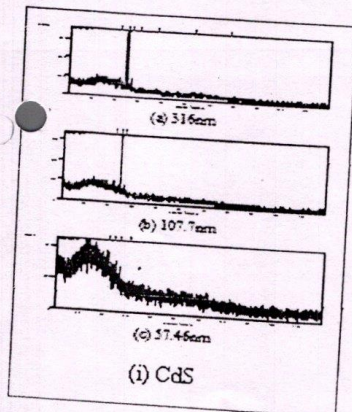


Figure 1(a): The XRD graphs for CdS at different thicknesses.

The average grain size ( $g$ ) was calculated using Debye-Scherrer's formula, [5-8]

$$g = 0.9 \lambda / \beta \cos \theta \quad \dots \dots (1)$$

re,

$\lambda$  = is the wavelength of X-ray source ( $1.54 \text{ \AA}$ )  
 $\beta$  = full width at half maximum of diffraction line.  
 $\theta$  = diffraction angle (Bragg's angle)

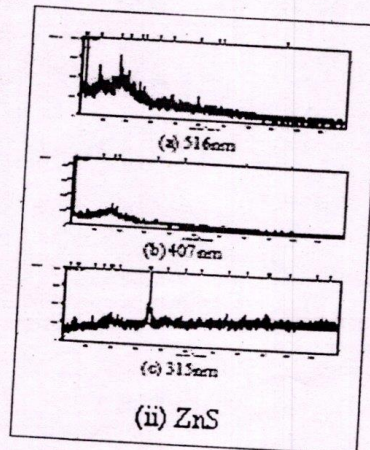


Figure 1(b): The XRD graphs for ZnS at different thicknesses.

Table 1 and 2 indicates variation of film thickness with grain size of CdS & ZnS thin films respectively. The average grain size obtained from X-ray diffraction pattern is between 25nm and 65nm for CdS and is between 24nm and 52nm for ZnS films.

Table 1: Variation of film thickness with grain size of CdS thin films.

Sample Nature	Sample Number	Thickness of film (t)(nm)	Grain size (nm)	Average Grain size g(nm)
Glass	A	407	34.91 15.26	25.085
Glass	B	516	14 57	35.5
Stainless steel	C	315	56 29 45	65

Table 2. Variation of film thickness with grain size of ZnS thin films.



Sample Nature	Sample Number	Thickness of film (t)(nm)	Grain size (nm)	Average Grain size g(nm)
Glass	A	57.46	14 29 29	24
Glass	B	316	44.14 59.57 37.10	46.936
Glass	C	107.7	58.86 44.67	51.765

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### 3.2 Morphological properties

The SEM images of thin film deposited, clearly exhibits a polycrystalline nature with nanometer grain size. The nanostructured grains densely packed in the form of nano tubes, which is helpful for various optoelectronic and sensor applications. The grain size obtained from SEM matches with the XRD data.



Figure 2: SEM photographs of CdS sample at different magnifications (a) X250 (b) X1500 (c) X2000.

### Conclusion

Nano-structured CdS/ZnS thin films were successfully prepared by CBDT. XRD study reveals the polycrystallinity of the films. The sharp peaks shows good crystallinity, resulting in high quality films. The grain size estimated is in the range of 24 to 65nm. The nanostructured grains with nano tube like structure are suitable for various optoelectronic and sensor applications.

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## MULTIFARIOUS USES OF PLANTS OF AKOT REGION, MAHARASHTRA

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### ABSTRACT:

Documentation and evaluation of uses of plants in Popatkeld Village of Akot region was conducted through personal interview. Multifarious uses of plants of this region were recorded from the informants. In this study, 72 plants species from different families were recorded. These plants were used for medicines and edible purposes.

**KEY WORD:** *Multifarious uses, Popatkhed village, Medicinal plants, Edible plants.*

### INTRODUCTION:

The Akot is situated in the Akola district of Maharashtra. It lies between 21°06' N and 77° 06' E. The area of Akot Tehsil is about 1424.5 sq. kms. The altitude is 345 m from the sea level. The present ethnobotanical study was carried out among the Gond and Korku tribals of Popatkhed village. The Akot Tahsil is traversed by many rivers, rivulets and streams. The peoples of the village Popatkhed depends upon natural resources for their food and medicines. They have strong faith in the knowledge of plants based medicines. These peoples preserve and utilized traditional knowledge of medicinal plants. The information on medicinal plants from Maharashtra has been reported earlier by various workers, but information of this area is scanty. Gond and Korku tribes are depends on nature for their livelihood. During illness they prefer herbal cure than allopathic medicines. Therefore, they have a lot of knowledge of medicinal plants. Various diseases like stomach disorders, jaundice, skin diseases, kidney problems, insect and snake bites are cured by the medicine man or elders of the Village.



### MATERIALS AND METHODS:

Ethnobotanical surveys were done on the medicinal plants used by Gond and Korku. For this purpose, Popatkhed village is selected. The investigations were carried out using a questionnaire (Jain, 1987). The elder peoples and medicine man were consulted. Around 100 plants were claimed for multifarious uses of plants by Gonds and Korku. The local names and plant parts used were noted during the interaction. These plants were identified with the help of flora (Kamble and Pradhan, Dhore). These plants are listed in table 1 in alphabetical order.

### RESULTS AND DISCUSSION:

The present study reveals uses of 72 plants. About 23 ailments are cured by these plants by the local peoples of the Village Popatkhed. The various ailments or diseases are cured by these medicinal plants are enumerated in the table 1 & 2.

In the future context, selecting plants with economic potential from these plants and practicing their cultivation will ensure and enhance income of farmers and also decrease exploitation of these plants from wild habitat. The cultivation will also provide sustainable supply of these plants in local and export markets at a wider commercial level. Further, the information might be valuable for many pharmaceutical companies as these have huge potential for innovative pharmaceutical products.

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TABLE 1:

S. N.	NAME OF THE PLANT	FAMILY	LOCAL NAME	PARTS USED	USES
1	<i>Abutilon indicum</i> (L.) Sweet	Malvaceae	Petari	Leaves and fruits	Skin diseases
2	<i>Acacia nilotica</i> (L.) Del.	Mimosaceae	Babul	Bark, seeds	Mouth diseases
3	<i>Achyranthes aspera</i> Blume	Amaranthaceae	Aghada	Leaves, Flowers, Fruits	Cough and cold
4	<i>Adhatoda vasica</i> Nees.	Acanthaceae	Adulsa	Leaves, flowers	Cough and cold
5	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Bel	Leaves and fruits	Stomach disorders
6	<i>Aerva lanata</i> (L.) Juss.	Amaranthaceae	Jhumuta	Roots	Scorpion sting
7	<i>Ageratum conyzoides</i> L.	Asteraceae	Khobi	Leaves	Skin diseases
8	<i>Ailanthus excels</i> Roxb.	Simaroubaceae	Maharukh	Bark	Leucorrhoea
9	<i>Albizia lebbek</i> (L.) Willd.	Mimosaceae	Siris	Leaves	Cough and cold
10	<i>Alternanthera sessilis</i> (L.) R.Br. ex DC.	Amaranthaceae	Sag	Leaves	Skin diseases
11	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Chokai	Leaves, Tender shoots	Edible
12	<i>Andrographis paniculata</i> (Burm. F.) Wall. ex Nees	Acanthaceae	kalmegh	Roots and Leaves	Snake bite
13	<i>Argemone Mexicana</i> L.	Papaveraceae	Satyanashi	Roots	Asthama
14	<i>Asparagus racemosus</i> Willd.	Liliaceae	Shatawari	Tuberous Roots	Urinary disorders
15	<i>Balanites aegyptica</i> (L.) Del.	Simaroubaceae	Hinganbet	Roots	Snake bite
16	<i>Basella alba</i> L.	Basellaceae	Pallak	Leaves and Fruits	Stomach disorders
17	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Punamava	Roots	Arthritis
18	<i>Bryophyllum pinnatum</i> (Lam.) Oken	Crassulaceae	Pamphuti	Leaves	Kidney stone
19	<i>Butea monosperma</i> Lamk.	Fabaceae	Paks	Flowers	Menstrual problems
20	<i>Capparis zeylanica</i> L.	Capparadaceae	Vaghati	Fruits	Stomach
21	<i>Carica papaya</i> L.	Caricaceae	Papaya	Fruits, Latex	Jaundice
22	<i>Cassia occidentalis</i> L.	Caesalpiniaceae		Leaves	Edible
23	<i>Cissus quadrangularis</i> L.	Vitaceae	Hadjod	Stem	Bone fracture
24	<i>Cleome viscosa</i> L.	Cleomaceae	Chikata	Leaves	Ear ache
25	<i>Clerodendrum phlomidis</i> L.f.	Verbenaceae	Safed fuli	Leaves	Diabetes
26	<i>Clitoria ternatea</i> L.	Fabaceae	Gokami	Flowers, Leaves	Menstrual problems
27	<i>Cocculus hirsutus</i> (L.) Theob.	Menispermaceae	Vasan	Leaves, Stem	Stomach disorders



28	<i>Colocasia esculenta</i> (L.) Schott	Araceae	Arvi	Leaves, Corm	Edible
29	<i>Commelina benghalensis</i> L.	Commelinaceae	Kena	Leaves	Edible, Sore treatment
30	<i>Cordia dichotoma</i> Forsk f	Boraginaceae	Gondan	Fruits	Urinary problems
31	<i>Costus speciosus</i> (Koen.) Sm.	Zingiberaceae	Keokand	Rhizomes	Skin diseases
32	<i>Curcuma pseudomontana</i> Grah.	Zingiberaceae	JangaliHaldi	Rhizome	Cough and cold
33	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Haral	Leaves	Stomach diseases
34	<i>Cyperus rotundus</i> L.	Cyperaceae	Nagarmotha	Rhizomes	Skin diseases
35	<i>Datura metel</i> L.	Solanaceae	Dhotra	Leaves	Ear ache
36	<i>Diplocyclos palmatus</i> (L.) C. Jeffery	Cucurbitaceae	Shivlingi	Seeds	Aphrodisiac
37	<i>Eclipta prostrata</i> L.	Asteraceae	Maka	Whole Plant	Fever
38	<i>Emilia sonchifolia</i> (L.) DC.	Asteraceae	Piwali	Leaves	Fever
39	<i>Ficus benghalensis</i> L.	Moraceae	Bargad	Latex	Impotency
40	<i>Ficus racemosa</i> L.	Moraceae	Umbar	Roots	Dysentery
41	<i>Hemidesmus indicus</i> (L.) R.Br.	Asclepiadaceae	Anantmul	Roots	Blood purifier
42	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Jaswand	Flowers	Aphrodisiac
43	<i>Hygrophila auriculata</i> (Schum.) Heiner	Acanthaceae	Talimkhana	Roots	Bile stone
44	<i>Hyptis suaveolens</i> Poit.	Lamiaceae	Sugandhi	Leaves	Stomach disorders
45	<i>Lantana camara</i> L.	Verbenaceae	Haldikunku	Leaves, flowers	Diarhea
46	<i>Martynia annua</i> L.	Martyniaceae	Waghnakhi	Seeds	Stomach problems
47	<i>Mentha arvensis</i> L.	Lamiaceae	Pudina	Leaves	Stomach disorders
48	<i>Mimosa pudica</i> L.	Mimosaceae	Lajalu	Whole plant	Body weight Loss
49	<i>Mimusops elengi</i> L.	Sapotaceae	Bakul	Bark, flowers, fruits	Mouth disorders
50	<i>Mucuna pruriens</i> (L.) DC.	Fabaceae	Khajkhuli	Seeds	Leucorrhoea
51	<i>Nyctanthes arbor-tristis</i> L.	Oleaceae	Parijatak	Leaves	Skin diseases
52	<i>Oledenlandia corymbosa</i> L.	Rubiaceae	Bhuisag	Whole plant	Jaundice
53	<i>Orthosiphon rubicundus</i> Benth	Lamiaceae	Jhumuta	Whole plant	Mosquito repellent
54	<i>Oxalis corniculata</i> L.	Oxalidaceae	Khattibuti	Whole plant	Stomach diseases
55	<i>Pergularia daemia</i> (Forssk.) Chior	Asclepiadaceae	Utaran	Whole plant	Chest pains
56	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Aonla	Fruits	Stomach problems



57	<i>Phyllanthus madagaspatensis</i> L.	Euphorbiaceae	Bluiaonli	Whole plant	Jaundice
58	<i>Plumbago zeylanica</i> L.	Plumbaginaceae	Chitrak	Roots	Fever
59	<i>Prosopis cineraria</i> (L.) Druce	Mimosaceae	Soundad	Bark	Leucorrhoea
60	<i>Psoralea corylifolia</i> L.	Fabaceae	Bavachi	Seeds	Leucorrhoea
61	<i>Pupalia lappacea</i> (L.) Juss.	Amaranthaceae	chirchita	Leaves	Edible
62	<i>Solanum nigrum</i> L.	Solanaceae	Mokai	Leaves	Kidney problems
63	<i>Syzygium cumini</i> L.	Myrtaceae	Jamun	Bark	Gonorrhea
64	<i>Tephrosia purpurea</i> (L.) Pers.	Fabaceae	Sharipunkha	Whole plant	Fever
65	<i>Tinospora cordifolia</i> (L.) Lam.	Menispermaceae	Gulvel	Leaves	Piles
66	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Gokharu	Fruits, Leaves	Kidney problems
67	<i>Tridax procumbens</i> L.	Asteraceae	Kambarmodi	Leaves	Wounds
68	<i>Vernonia cinerea</i> (L.) Less.	Asteraceae	Sahdevi	Leaves	Mouth diseases
69	<i>Vitex negundo</i> L.	Verbenaceae	Niragudi	Leaves	Rheumatism
70	<i>Withania somnifera</i> (L.) Dunal	Solanaceae	Ashwagandha	Rhizomes	Aphrodisiac
71	<i>Xanthum strumarium</i> (Roxb.) L.	Asteraceae	Gokharu	Leaves	Urinary problems
72	<i>Ziziphus mauritiana</i> Lam.	Rhamnaceae	Bor	Leaves	Piles

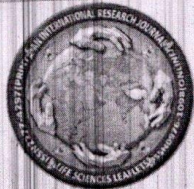
Table 2.

S.N.	Disease	Number of plant species
1	Stomach disorders	09
2	Menstrual problems, Leucorrhoea, Gonorrhea	07
3	Kidney problems, Urinary diseases	07
4	Skin diseases	06
5	Cough and cold	05
6	Edible	05
7	Fever	04
8	Mouth diseases	04
9	Aphrodisiac, Impotency	03
10	Snake bite, scorpion sting	03
11	Jaundice	02
12	Piles	02
13	Arthritis, Rheumatism	02
14	Ear ache	02
15	Dysentery, Diarrhea	02
16	Mosquito repellent	01
17	Chest pains	01



S.N.	Disease	Number of plant species
18	Body Weight loss	01
19	Blood impurity	01
20	Lactation	01
21	Bone fracture	01
22	Asthma	01
23	Wound	01
24	Diabetes	01
	<b>Total</b>	<b>72</b>





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## ETHNOBOTANICAL PLANTS USED FOR CURING SKIN DISEASES BY TRIBAL PEOPLE FROM AMBABARVA SANCTUARY (M.S.)

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### ABSTRACT:

The paper deals with study of exploration of diversity of medicinal plants of tribal areas of Ambabarva sanctuary of Maharashtra. The plant species used in the treatment of skin diseases among the tribal communities of the sanctuary. About 15 plant species of 11 families were recorded for the treatment of various skin diseases.

**KEY WORDS:** Medicinal plants, Skin disease, Ambabarva sanctuary, Maharashtra.

### INTRODUCTION:

The tribal knowledge of plants is an important aspect of ethnobotanical research. Tribal people are important for their treasured and unique knowledge of plant wealth. These plants are new source of herbal drugs and other aspect of plants. These plants are of immense value to human health and about 80% of world's population relied on plants for cure of various ailments (Chauhan, 1999). The World Health Organization (WHO) estimates that about 80% of the population of most developing countries relies on herbal medicines for their primary healthcare needs (Desilva, 1997). Indigenous knowledge on natural resources, utilization of medicinal plants not exceeding the resilience of the surrounding environment is regarded as an important solution of sustainable plants biodiversity conservation (Kala, 2005). Without proper documentation of this knowledge the cultural heritage is demised. The present investigation has been carried out to explore the medicinal plants of tribal areas of Ambabarva sanctuary. Ambabarva sanctuary is situated in Buldhana district of Maharashtra. This sanctuary is a part of Melghat Tiger



Reserve. The area is rich in medicinal plant wealth. Since, immemorial times plants have been used as source of food, shelter, clothing, medicine, fibre, gum, resin, oil etc. Several species which grow wild are being used for edible purposes local habitants of Ambabarva Sanctuary. Many of such wild species have become popular now and cultivated extensively. Various parts of such plants are used as vegetables, pickles or other preparations. The tribal communities of Ambabarva Sanctuary are Korku and Gond. The Ambabarva Sanctuary comprising of 127.11 Sq Kms lies nestled in the Satpura Hill Ranges of Buldhana district of Maharashtra. The Sanctuary, touching a maximum altitude of 933.50 msl, has temperature varying from 35 to 43 degree Celsius and an annual rainfall that varies from 500 to 900 mm. Lying south of the Melghat Tiger Reserve, this Sanctuary is under the administrative control of the Deputy Conservator of Forests, Wildlife Division Akot working under the Conservator of Forests and Field Director, Melghat Tiger Reserve based at Amravati. The area is well known for its richness of flora and fauna. The Sanctuary area has special historical, biological, mythological, archaeological, scenic and recreational values and is a point of attraction for the tourists and the people of Maharashtra. The rich and varied miscellaneous forests of the area provide natural habitat to birds and wild animals.

During the survey of this area it was noticed that several wild species are used for medicinal purposes by these local tribal peoples. Such wild medicinal plants have enumerated below. The botanical names, local names, family and local names are followed by collection number. The plant parts used in the treatment of skin diseases also mentioned.

#### **MATERIAL AND METHODS:**

Several ethnobotanical surveys were conducted during the period 2010-12 in tribal areas of Ambabarva sanctuary. The study area lies on the Satpuda Hill Ranges in the district of Buldhana of Maharashtra. An extensive data were collected regarding the utility of plants for food and medicines. The ethnobotanical data was collected from tribal people, Vaidyas, Gram Pradhan and other experienced informants having knowledge of herbal drugs used by different tribal people. The plants were collected and their herbarium was prepared as per standard protocol as described by Verghese (1996). The collected plants were identified with the help of floras and other taxonomic literature (Kamble & Pradhan, 1988; Dhore, 1971).

#### **RESULTS AND DISCUSSION:**

In the present study 15 plant species belonging to 11 families are used as medicine for the treatment of skin diseases. Family Euphorbiaceae with 3 species was the dominant family. Followed by Mimosaceae with 2 species, Asteraceae with 2 species, Acanthaceae with 2 species, Meliaceae with 1 species, Liliaceae with 1 species, Combretaceae with 1 species, Sapotaceae with 1 species, Fabaceae with 1 species, Rutaceae with 1 species. *Abrus precatorius*, *Acacia catechu*, *Asparagus racemosus*, *Hygrophila auriculata*, *Madhuca longifolia*, and *Mallotus philippensis* are used in the treatment of various types of



skin diseases. *Aegle mormelos* and *Clitorea ternatea* are use in the treatment of scabies. *Ageratum conyzoides* is used to cure leprosy.

#### CONCLUSION:

The present study is deals with the traditional medicinal or folk medicine practice based on the use of plants and plant extracts. Such traditional use of medicines is recognized as a way to learn about potential future medicines. Plants have evolved the ability to synthesize chemical compounds that help them defend against attack from a wide variety of predators such as insects, fungi and herbivorous mammals. By chance, some of these compounds, while being toxic to plant predators, turn out to have beneficial effects when used to treat human diseases. Plants contain phytochemicals that have effects on the body. The information of medicinal plants from the forest dwellers is very important clue for the searching of new drugs. Phytochemical analysis of these plants would be helpful for investigation of various drugs from these plants. Further these drugs becomes separated and purified for formulation as new drug for the treatment of various skin ailments.

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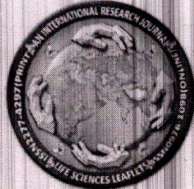
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## ENUMERATION OF ETHNOBOTANICAL PLANTS

S.N.	Botanical Name	Family	Local Name	Plant part used	Mode of treatment
1	<i>Abrus precatorius</i> L.	Fabaceae	Gunja, Ghumchi	Seeds	Paste of the seeds applied on the skin for treatment of disease
2	<i>Acacia catechu</i> (L.f) Willd.	Mimosaceae	Khair	Bark	Bark paste is applied on the skin to cure disease
3	<i>Acacia nilotica</i> (L.) Willd. Ex Delile	Mimosaceae	Babool	Leaf, Bark	Bark and Leaves paste is applied locally on skin to cure body swelling
4	<i>Aegle marmelos</i> (Linn.) Corr. Serr.	Rutaceae	Belpatri	Fruit, Leaves	Unripe fruits and tender leaves paste is applied on the skin to cure scabies
5	<i>Ageratum conyzoides</i> L.	Asteraceae	Khajju	Leaf, stem	The paste of leaves and stem is applied locally to cure leprosy
6	<i>Andrographis paniculata</i> (Burm. f) Wall. ex Nees	Acanthaceae	Kalmegh	Whole plant	The paste of whole plant is applied on the skin to cure disease
7	<i>Asparagus racemosus</i> Willd.	Liliaceae	Shatavai	Tuber	Tuber paste is applied to cure skin disease
8	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Kadua Neem	Leaf, flower, bark	Leaf and bark decoction is applied on the skin to cure skin disease Flower boiled in hair oil and it is applied on the head externally to cure dandruff.
9	<i>Clitoria ternatea</i> Linn.	Fabaceae	Gokarni	Leaf	Leaf juice is applied on the skin to cure disease
10	<i>Datura metel</i> Linn.	Solanaceae	Dhatura	Leaf	Leaf juice is applied on the swellings
11	<i>Euphorbia hirta</i> Linn.	Euphorbiaceae	Dhudhi	Latex	Latex is applied on skin to cure disease
12	<i>Hygrophila auriculata</i> (Schum.) Heine	Acanthaceae	Talimkhana	Leaf, roots	Dried leaf and roots powder is applied on the affected part of the skin to cure disease
13	<i>Madhuca longifolia</i> (Koenig.) Macoride	Sapotaceae	Mahua	Seeds	The paste of seeds is applied on the skin to cure skin disease
14	<i>Mallotus philippensis</i> (Lam.) Muell. Arg.	Euphorbiaceae	Kumkum	Fruits	Red powder obtained from fruits mixed with coconut oil is applied externally to cure skin diseases
15	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Combretaceae	Bahera	Fruits	Paste made from the fruits is applied on the skin to cure rashes





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## BIODIVERSITY OF TREE PLANTS OF NARNALA WILDLIFE SANCTUARY, MAHARASHTRA

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### ABSTRACT:

Narnala is an ancient fort in the hills in the north of Akot Taluka at a point where a narrow tongue of Akola District runs a few miles in to the Melghat. This area is Southern part of Melghat Tiger Reserve. The area is well known for its richness of flora and fauna. The Sanctuary area has special historical, biological, mythological, archaeological, scenic and recreational values and is a point of attraction for the tourists and the people of Maharashtra. The plants are studied from Narnala Fort and the vicinity of the Fort. This area is rich in plant diversity. The sanctuary consists of a wide range of vegetation growing at different locations. A survey of the Narnala Wildlife Sanctuary was carried out during 2011- 2013. The present investigation deals with the taxonomic enumeration of tree plants recorded from Narnala sanctuary of Maharashtra. Altogether 59 species belonging to 29 families are reported from this region in the present study.

**KEY WORDS:** Biodiversity, Tree plants, Wildlife sanctuary.

### INTRODUCTION:

Tropical forests are regarded as one of the most species diversity rich terrestrial ecosystems. They are distinguished from all other terrestrial ecosystems by a very high diversity in many levels (species, life forms, etc). However, most of these forests are under immense anthropogenic disturbances and require careful management intervention to maintain overall biodiversity and sustainability (Kumar *et al*, 2006). Information with reference to species diversity and distribution pattern may help in evaluating the ecological significance of the study area. Trees occupy the important place in the vegetation. Trees have always been associated with wisdom and immortality in



India. Trees are important component of the natural forests because of their prevention of erosion and the provision of a weather-sheltered ecosystem in and under their foliage. They also play an important role in producing oxygen and reducing carbon dioxide in the atmosphere, as well as moderating ground temperatures. Timber from trees is a building material, as well as a primary energy source in many developing countries. Trees are also play a role in many of the world's mythologies. Narnala Sanctuary is situated in Akot Tahsil of Akola district of the Maharashtra state. The total area of the Sanctuary is 12.00 sq.km. The study area is lies between 23° 28' N latitude and 73° 18' E longitude. The area is traversed by river, which passes through mid part of whole taluka. Geologically, area is on the Satpuda mountain ranges.

#### MATERIAL AND METHODS:

The tree species were studied from the Sanctuary and from the vicinity of the Sanctuary. Numbers of the field trips were arranged in accordance with the different seasons throughout the whole year. The collected plants were brought to the laboratory, identified. The plant specimens were dried up with customary method and were mounted on herbarium sheets and labeled. The specimens were deposited in the Department of Botany, Shri Shivaji Arts, Commerce & Science College, Akot. In the enumeration, the collected plants were arranged family wise. The botanical name, family, local name were given in Table-1.

#### RESULTS AND DISCUSSION:

During present study recorded total 69 tree species and 29 families were collected and thoroughly observed (Table-1). Table-2 shows the dominating top five families with highest number of species.

**Table-1: Enumeration of tree species of Narnala Sanctuary.**

SR. NO.	BOTANICAL NAME	FAMILY	LOCAL NAME
1	<i>Annona squamosa</i> L.	Annonaceae	Sitaphal
2	<i>Miliusa tomentosa</i> (Roxb.) Sinclair.	Annonaceae	Umph
3	<i>Kydia calycina</i> Roxb.	Malvaceae	Homba
4	<i>Casearia graveolens</i> Dalz.	Flacourtiaceae	Bakhada
5	<i>Flacourtia indica</i> Comm.	Flacourtiaceae	Lodra
6	<i>Bombax ceiba</i> L.	Bombacaceae	Semal
7	<i>Eriolaena hookerina</i> Wight & Arn.	Sterculiaceae	Bother



8	<i>Sterculia urenus</i> Roxb.	Sterculiaceae	Kadao
9	<i>Grewia tiliefolia</i> Vahl	Tiliaceae	Dhamn
10	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Bel
11	<i>Chloroxylon swietenia</i> DC.	Rutaceae	East Indian Satinwood
12	<i>Ailanthus excelsa</i> Roxb.	Simaroubaceae	Maharukh
13	<i>Boswellia serrata</i> Roxb.	Burseraceae	Salai
14	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Kadu nimb
15	<i>Soymida febrifuga</i> (Roxb.) A.Juss.	Meliaceae	Rohan
16	<i>Cassine glauca</i> (Rottb.) O.Ktze	Celastraceae	Bhutikes1098
12	<i>Maytenus emarginata</i> (Willd.) D.Hou.	Celastraceae	Danti
13	<i>Schleichera oleosa</i> (Lour.) Oken	Sapindaceae	Kusum
14	<i>Buchnanan lanzen</i> Spreng.	Anacardiaceae	Charoli
15	<i>Lannea coromandelica</i> (Houtt.) Merrill.	Anacardiaceae	Moin
16	<i>Mangifera indica</i> L.	Anacardiaceae	Amba
17	<i>Semecarpus anacardium</i> L.f.	Anacardiaceae	Bibba
18	<i>Cassia fistula</i> L.	Fabaceae	Amaltas
19	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	Palas
20	<i>Dalbergia latifolia</i> Roxb.	Fabaceae	Sisam
21	<i>Hardwickea binnata</i> Roxb.	Fabaceae	Anjan
22	<i>Bauhinia racemosa</i> Lamk.	Caesalpinaceae	Kanchanar
23	<i>Bauhinia variegata</i> L.	Caesalpinaceae	Apta
24	<i>Tamarindus indica</i> L.	Caesalpinaceae	Chinch, Imli
25	<i>Acacia chundra</i> (Roxb. Ex. Rottl.) Willd.	Mimosaceae	Khair
26	<i>Acacia leucophloea</i> (Roxb.) Willd.	Mimosaceae	Hiwar
27	<i>Acacia nilotica</i> (L.) Del.	Mimosaceae	Babul



28	<i>Dichrostachys cinerea</i> (L.) W. & A.	Mimosaceae	kateri
29	<i>Pithecoelobium dulce</i> (Roxb.) Benth.	Mimosaceae	Vilayati Chinch
30	<i>Prosopis cineraria</i> (L.) Druce.	Mimosaceae	Saundad
31	<i>Anogeissus latifolia</i> (Roxb.) Wall.	Combretaceae	Dhavada
32	<i>Terminalia alata</i> Hyene ex Roth.	Combretaceae	Ain
33	<i>Terminalia arjuna</i> (Roxb.) W. & A.	Combretaceae	Arjunsadada0976 –
34	<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Combretaceae	Bihada
35	<i>Terminalia chebula</i> Retz.	Combretaceae	Hirda
36	<i>Syzygium cumini</i> (L.) Skeels.	Myrtaceae	Jambul
37	<i>Adina cordifolia</i> (Roxb.) Bth. & HK.f.	Rubiaceae	Haldu
38	<i>Ixora arborea</i> Roxb.	Rubiaceae	Lokhandi
39	<i>Mitragyna parvifolia</i> (Roxb.) Korth.	Rubiaceae	Kadamb
40	<i>Morinda tomentosa</i> Heyne. ex Roth.	Rubiaceae	Aal
41	<i>Xeromphis spinosa</i> (Thunb.) Keay.	Rubiaceae	Mindhal
42	<i>Madhuca longifolia</i> (J.Konig) J.F.Macbr.	Sapotaceae	Mohphul
43	<i>Manilkara hexandra</i> (Roxb.) Dab.	Sapotaceae	Dudhi
44	<i>Diospyros melanoxylon</i> Roxb.	Ebenaceae	Temburni
45	<i>Nyctanthes arbortristis</i> L.	Oleaceae	Parijatak
46	<i>Wrightia tomentosa</i> R. & S.	Apocynaceae	Dudhi
47	<i>Cordia dichotoma</i> Forst. F. Prodr.	Boraginaceae	Bhokar
48	<i>Gmelina arborea</i> Roxb.	Verbenaceae	GambhariSN09761098
49	<i>Tectona grandis</i> L.	Verbenaceae	Sag
50	<i>Vitex negundo</i> L.	Verbenaceae	Nirgudi
51	<i>Santalum album</i> L.	Santalaceae	Chandan
52	<i>Mallotus philippensis</i> (Lam.) Muell.Arg.	Euphorbiaceae	Kumkum tree
53	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Aonla



54	<i>Holoptelia integrifolia</i> (Roxb.) Planch.	Ulmaceae	Palaspapadi
55	<i>Trema orientalis</i> (L.) Blume	Ulmaceae	Indian Charcoal tree
56	<i>Ficus bengalensis</i> L.	Moraceae	Vad
57	<i>Ficus racemosa</i> L.	Moraceae	Umbar
58	<i>Ficus religiosa</i> L.	Moraceae	Pimpal
59	<i>Phoenix sylvestris</i> (L.) Roxb.	Arecaceae	Tad

From the above observation, it can be concluded that Mimosaceae is the dominant and leading family, species wise as well as genera (06) wise, followed by Combretaceae (05), Rubiaceae (05), Anacardiaceae (04), and Fabaceae (04) in Narnala Sanctuary. Out of 27 families, total 11 families are monogeneric and monospecific.

Table 2.

Family name	Number of species
Mimosaceae	06
Combretaceae	05
Rubiaceae	05
Anacardiaceae	04
Fabaceae	04

During the present study, different areas of Narnala Sanctuary were visited thoroughly and frequently to record different wild growing trees and cultivated. The deciduous teak forest is found in the forest areas of reserves. This region consists of mixed type of plant species with dominant teak forest is also found in Narnala range. Some of the important trees in the forest area observed during the survey are *Acacia nilotica* (L.) Del., *Bombax ceiba* L., *Flacourtia indica* Comm., *Lannea coromandelica* (Houtt.), *Prosopis cineraria* (L.) Druce., *Annona squamosa* L., *Ficus bengalensis* L., *Madhuca longifolia* J.F., *Mitragyna parvifolia* (Roxb.) Korth, *Boswellia serrata* Roxb., *Maytenus emarginata* (Willd.) D.Hou, *Diospyros melanoxylon* Roxb., *Tectona grandis* L., *Santalum album*, *Sterculia urens* Roxb., *Wrightia tomentosa* R. & S., *Gmelina arborea* Roxb. etc.



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## ALICE WALKER AS NOVELIST OF COLOR CONSCIOUSNESS AND MULTIRACIALISM

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### Abstract:-

Alice Walker is that the living and audacious voice of coloured individuals of Africa. she is an African yankee author, story author, writer and author. As an original author Walker's vision is frozen within the economic hardship, racial terror, and people knowledge of African yankee life and culture, particularly within the rural south. In her art she supports against the oppressive rituals of cutting out in Africa and also the geographical region create her vocal advocate of international women's rights. Walker's all non-fictional works and 6 novels place a lot of stress on the identity crisis of her protagonists supported inner workings of African yankee life on the relationships between blacks and whites. Her writing explores multidimensional kinships among ladies and embraces the redemptive power of social revolution. Her revolutionary sense is jam-packed with numerous colours with the multilayer of human development on humanistic basement.

**Keywords:** Colored People, Consciousness, Racism, Sexism, Exploitation, etc.

### INTRODUCTION

Alice Walker's literary reputation is based primarily on her fiction. Novel, as a literary genre, is an influential and forceful weapon in the hands of Walker to outlet her boiling inner passing. Her first novel *The Third Life of Grange Copeland* (1970) and second novel *Meridian* (1976) deals with her own experience, crazing for human values in African-American society. The *Temple of My Familiar* (1989), explores the depths of human character, history, myths and legends to uncover beauty and joy. In *By the Light of My Father's Smile* (1998) the relationship between father and daughter is woven finely. Her master piece *The Color Purple* (1982), which won the prestigious Pulitzer Prize in 1983, depicts the trouble of young black woman fighting with racist white culture and patriarchal black culture. Possessing the *Secret of Joy* (1992) narrates the cultural conflict in black life. Her work focused on the struggles of black people, particularly women, and their lives in a racist, sexist and violent society. While writing on the specific areas of race, class and gender, Walker's entire concern is on the universal problem of the quest and consciousness for Black identity, their individual relation with society on various dimensions of spiritual, social, physical, cultural, and the problems of forgiveness and reconciliation as well as racism and sexism. African American Literature is an important and influential force accelerating the speed of entire English Literature. Violence against African American people, young and old, male and female, is an overwhelming concern in the novels of Alice Walker. The history of black in America has invariably been one of victimization and oppression with the interracial violence manifested in whipping, lynching, branding and various other tortures, race riots, and the brutality of white society. Being a human, the characters of Walker's fiction rebel with self and society. The sense of aliveness with blood and flesh equal to white women energized them, to think about 'own', in Black patriarchal society. The social awareness from ignorance to conscious, passive to active and battle for better life is amazingly narrated by Walker.

Alice Walker is conscious with the slow and constant development in the up growing stage of black people. Her minute observation of her aborigine makes her full of pride in mind though it appear a heart of darkness

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to rest of the world. Black women's literature continues to the peculiar predicament that black women face in America. The Harlem Renaissance was started in early 1920s which was characterized by a new spirit of achievement and opportunity for collective creative expression by African American writers. It is the term used for the burst of creativity among African American writers and artists in the nineteen twenties and the early part of the thirties in the New York City, particularly in the Harlem district. The term "Renaissance" is loosely applied to this creativity because it was the very first opportunity to African Americans to create and celebrate the uniqueness of their culture. The movement emphasizes on the African heritage of American blacks. Africa was no longer considered as a primitive land or source of disgrace, shame and hatred for black Americans. Now it became a sign of pride and prestige.

The Black Power and Black Arts Movements were started in 1965 when LeRoi Jones and other black artists opened the Black Arts Repertoire Theatre School in Harlem. Jones whose play *Dutchman* provided consolidated artistic model for the new black aesthetics. According to Larry Neal, the movement was aimed at consolidating the African American personality. Its major attention was to highlight the internal problems of the community. The year 1970 was a landmark in respect of the African American women's writing. This was the outcome of the intersection of two movements - the women's rights movement and the black power movement. Several important books were published in 1970 - Maya Angelou's autobiography *I Know Why the Caged Bird Sings*, Toni Cade Bambara's anthology *The Black Woman*. The trinity of women novelists with their debut novels gave a clarion call to the global black awareness is, Alice Walker in *The Third Life of Grange Copeland*, Toni Morrison in *The Bluest Eye* and June Jordan in *Own Whereby*. Alice Walker began publishing her fiction and poetry during the latter years of the black arts movement in the 1960s. Her work along with that of such writers as Toni Morrison and Gloria Naylor, however, is commonly associated with the post -1970s surge in African American women's literature.

Caste and color discrimination is a social realism to be depicted in African American society. The struggle for existence as an independent identity goes on with Walker's fiction. The traditional setting of 'female suppressive' society has been challenged on the humanistic level by Walker's art. The relationships between individual and society on human path have been globalised by Walker's characterization. The zeal for democratization of human rights, the clarion call for parity in men and women in all walks of life, the earnestness of social organic unity and equality projected in Walker's world of words. Racism and sexism are dominant obstacles in the way of black life of African American woman in the world of Walker's artistic creation. Powerlessness of colored females in socio-political arena has been sought out under the humanistic shade by Walker. The relationships between male and female characters 'within and without home' in settled social system will be predominantly focused in Walker's fictional art.

The *Color Purple* is the master piece of Afro-American socio-cultural traditional trends and modern mode of survival filled up with vivid colors of ethnic evaluation and aboriginal abnormality. It is a symbol of dark and white color, ignorance and knowledge, hatred and love, amnesia and awareness etc. while comparing the colored people with the rest of the whites' people in the renaissance of human development. A sense of aliveness with body and soul was clutches the afro-American community under the abysmal of social snare strangled by whites supremacy. Class, color and gender discrimination are the central causes of suffering for the black people of American society. Sexism and Racism have long lasting damaging effects on the African American community enlivened both by internal and external social forces. Walker's entire work mirrors the miscellaneous effects of black experience which reflect the rising trends from the ethnic human humiliation. The vivid layers of human relationships interwoven with Walker's artistic vision in between whites and blacks, colored males and females, within black females etc. embroidered on the canvas of human relationships.

Alice Walker is an illustrious and energetic novelist. Her novels are characterized by creative energy as well as rhythmical sense which pour the power of living life based on social actuality of American community. In her novels she has tried to imprint the black experience which was earlier vague and erased by the white supremacy. While writing on this burning issue of white racism her total attention is on the universal problem of the quest for identity of black, their aspirations, and their individual relationships with the society. The dimension and authenticity of the research will be of great interest on national and international level who wishes to gain a profound understanding of this important and vital issue of American society as well as the dilemma of oppressed class discriminated on the basis of gender, class and creed, worldwide. Thus, her work has a strong relevance to the social, cultural, political and spiritual scope not only with African-American society but also it has the universal relevance.

Her novel explores the possible whys and hows of this violence, which is, in fact, towards black females; it also goes in to the ways in which black women survive their oppression. Violence is an exertion force to deal injury or abuse with black people. It entails inflicting physical, material, emotional, sexual and intellectual damage.



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## Gary Snyder as Poetic Voice of Natural Neutrality and Spirituality

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### Abstract

*The study of the poetry of Snyder is nothing but the global sympathy for the Nature and its antic mystery to maintain in a positive and optimistic way. Snyder is the champion of the Nature and Environment. He studied in his poetry the relation between Nature and Human nature on humanistic level. As a priest of Nature and lover of its all creatures, Snyder, favors more on the original civilization which cares much about Nature. He likes Buddhism which kept reserve the Natural bond in its ancient values and seeks out the real joy of life in the rich wealth of Nature. The purification and content of mind, calm of soul and stability of intellect is not in shining four walls, but in the boundless Natural wildness. According to Snyder, Buddhism is the compendium of Natural joy which spur the poet, to denounce the earthly pleasure and explore the real motto of life. The issue raised in the poetry of Snyder is concerned with the environment and ecology which is the universal topic of talk, particularly in modern environmental polluted world. According to Snyder, the 'Revival of Nature' based on Buddhism is a ray of hope for content life forever.*

**Keywords:** Ecology, Ecocriticism, Buddhism, Spirituality, Nature, Environment, Social Concern etc.

Gary Snyder is an American poet as well as an essayist, lecturer and naturalist, reputedly known as an unofficial 'poet laureate of Ecology'. Snyder is a winner of Pulitzer Prize for Poetry. His work, in his various roles, reflects an interest in both Buddhist spirituality and Nature. The love for Nature, cordiality for wildness, sympathy for the billows of the killing animals, disappearance of million species, pathos in deforestation and compassion in deserted birds is highly projected in the poetry of Gary Snyder. He accepts Nature not only as his family but as abode. Far from physical and pleasure life, Gary Snyder finds a dose of tonic to the anxiety in Nature. Snyder is a firm believer of Buddhist philosophy, urged the world to keep the eternal bond of Natural love in practical life. The eco of Ecology and Buddhism in Snyder's poetry teach to love Nature and its all creatures. As a medicine to the malady of human whimsical nature, 'Natural Neutrality' is an elixir to Snyder, to balance Natural World. It will save entire social civilization from demolishing the earthly geology. He makes conscious to his reader about the impending danger of the collapse of the world, if it continues; the man will have to pay the heavy price for the decay of Naturalness. Snyder as a champion of Nature, an environmentalist, and crusader of Natural creatures and its preservation, is an accomplished technician in poetic craft in the world of words. As an ambassador of Buddhist philosophy, Snyder, is optimistic with its absorption in the lap of Nature.

Snyder's work blends physical reality and exact explanation of nature with inner insight received mainly

through the practice of Zen Buddhism. While Snyder has gained attention as a spokesman for the preservation of the Natural world and its earth-conscious cultures, he is not simply a 'back-to-nature' poet with a superficial message. Snyder has looked to the Orient and to the beliefs of American Indians for positive responses to the world, and he has tempered his studies with stints of hard physical labor as a logger and trail builder.

Ecosystem is an asset for healthy and hygiene world. From the primitive to the present day, the Natural creativity is showering its blessings upon human beings. The greed for Mammon worship, lust for physical pleasure and power and craze for blind development of modern man is limitless. For the attainment of all these blind values in this 'fast food generation' world, under the guise of glow and glamour, the moral and ethics are on its devastation. Consequently, the Natural ecosystem is losing its aboriginal stage. The world is facing the numerous problems on internal and external level. The environment along with its all aspects is showing its dangerous mood due to human hurt. The global warming, melting glaciers, deluge, water, air and sound pollution, deforestation, destruction of rocky mountains, drought, famine, aridity of soil and countless diseases in human body are the burning problems before the universe, today. The omission of the poisonous green house gases like Carbon Dioxide, Nitride Oxide and CFC of the developing and developed countries, to find common consent solution on it, is an acid taste to the world. The



present civilization under the veil of progress, corroding the ecosystem and this Natural hollowness is nothing but the eclipse to the earth. To preserve the universe, Snyder urged the world to back towards Nature as rested in Buddhism.

As a priest of Nature and staunch supporter of Natural Justice his poetry brings out perennial love for Nature. The amalgamation of Ecocriticism and Buddhism on the basis of humanity is a breathing line to Snyder. As an ecological poet he excels in delineating the rays of Ecocriticism and Buddhism in his poetry. The relation between Literature and Nature is quite profound. Gary Snyder's poetry, as a genre of literature and form of art, has blended Buddhism and Nature and human nature in an artistic and humanistic way. The poetic aspects of Snyder's art are quite appealing to students, readers, humanitarians and amateurs of literature, to follow the path of his direction. Snyder has flashed the Eco-criticism and impact and ideology of Buddhism in his poetry.

As a translator and traveler of human mind, Snyder associated with American Literary Movement. It was a broader phenomenon encompassing visual and performing arts, philosophy, cross-cultural interests, particularly in Asian cultures, and new social sensibilities. He uses mainly public speech-patterns as the basis for his lines, though his style has been noted for its 'flexibility' and the variety of different forms his poems have taken. He does not typically use conventional meters or intentional rhyme. Love and respect for the primitive tribe, honor accorded the Earth, the escape from city and industry, the possible, contemplation, the communal, such, is the awareness and commitment behind the specific poems. Snyder's poetry addresses the life-planet identification with strange simplicity of style and complexity of effect.

From the late 1960s, the content of Snyder's poetry increasingly had to do with family, friends, and folks. He continued to publish poetry throughout the 1970s, much of it reflecting his re-immersion in life on the American continent and his involvement in it. Snyder wrote numerous essays setting forth his views on poetry, culture, social experimentation, and the environment. Many of these were collected in *Earth House Hold* (1969), *The Old Ways* (1977), *The Real Work* (1980), *The Practice of the Wild* (1990), *A Place in Space* (1995), and *The Gary Snyder Reader* (1999). In 1979, Snyder published *He Who Hunted Birds in His Father's Village: The Dimensions of a Haida Myth*, based on his Reed thesis. Snyder's journals from his travel in India in the mid-1960s appeared in 1983 under the title *Passage through India*. In these, his wide-ranging interests in cultures, natural history, religions, social critique, contemporary America, and hands-on aspects of rural life, as well as his ideas on literature, were given full-blown articulation. He shared Buddhism, extensive travels, and performed independent work as a naturalist. He has explored a wide range of social and

spiritual matters in both poetry and prose. All poetic activity of Snyder shows the great zeal about ecology and Buddhist spirituality.

As Snyder's involvement in environmental issues and his teaching grew, he seemed to move away from poetry for much of the 1980s and early 1990s. However, in 1996 he published the complete *Mountains and Rivers without End*, a mixture of the lyrical and epic modes celebrating the act of inhabitation on a specific place on the planet. This work was written over a 40-year period. It has been translated into Japanese and French. In 2004 Snyder published *Danger on Peaks*, his first collection of new poems in twenty years. Many of Snyder's poems aim specially at instilling an ecological consciousness in his audience. This theme pervades Snyder's 1974 Pulitzer Prize-winning volume, *Turtle Island*, a work in which the poet manages "to locate the self ecologically in its actions and interactions with its environment. Snyder has always maintained that his personal sensibility arose from his interest in Native Americans and their involvement with nature and knowledge of it; indeed, their ways seemed to resonate with his own. And he has sought something similar to this through Buddhist practices, Yamabushi initiation, and other experiences and involvements.

His poetry reads the gap between nature and culture so as to point to ways in which the two can be more closely integrated. This simplicity and complexity derives from Snyder's use of natural imagery, geographical formations, flora, and fauna, in his poems. Such imagery can be corporeal at a personal level yet universal and generic in nature. In the 1968 poem "Beneath My Hand and Eye the Distant Hills, Your Body," the author compares the intimate experience of a lover's caress with the mountains, hills, cinder cones, and craters of the Uintah Mountains. Readers become explorers on both a very private level as well as a very public and majestic level. A simplistic touch becoming a very complex interaction occurring at multiple levels is the effect intended in his literary art.

Natural wildness is a boon for mankind if its benefits and usages are taken on the basis of humanity. Human life and Nature is a bond of forever. The atmosphere of rivers, rivulets, fountains and flowers is an antidote to human illness. The values of water, air, fire and earth have been playing an important role in the human life right from evolution to exist time. The fair use of flora and fauna has helped the universe to attain the acme of success. But as civilization advanced Nature declined. Industrial Revolution and Scientific Progress destroyed the wonder of wild woods. The extra greed of mankind from Nature polluted it with bones. The ecosystem of Nature is degenerated due to imbalance of Nature. The dehumanization of nature has appealed to the Nature worshippers, environmentalists and literatures all over the globe for the restoration of its primitive charm alive.

The preservation of Nature in its genuine stage is the need of hour. To restore Nature in its ancient value,



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Gary Snyder as Poetic Voice of Natural Neutrality and Spirituality

Snyder peeps into Buddhism which provides peace and content of life on the level of medium path of Lord Buddha. The sense of meditation, casting off the yoke of corrupt human senses, the concept of 'All in Nothingness and Nothing in All', are the trends of Buddhism rested in dark and deep woods, in high mountains and meadows, appealed to Snyder. As an ambassador of Buddhist philosophy, Snyder, is optimistic with its absorption in the lap of Nature. As a priest of Nature and staunch supporter of Natural Justice his poetry brings out perennial love for Nature. The amalgamation of Buddhism and Ecocriticism on the base of humanity is a breathing line to Snyder. As an ecopoet he excels in delineating the aspects of Buddhism and Ecology in his poetry.

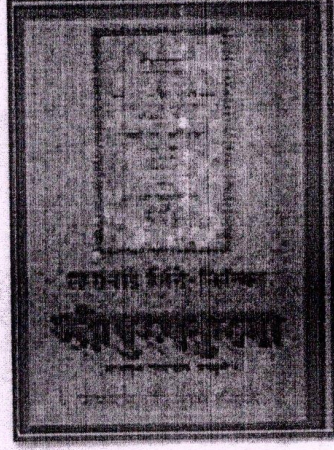
The reflection of Buddhist ideology has been discussed in Snyder's poetry. The relationship of Buddhism and flashes of fauna and flora in respect of wild nature is sought out by the poet. The transition in natural life from pure primitive to present panic stages described in it. So also the projection of crazy, money and narrow minded nature of modern man is exposed here. The ecosystem of the global hemisphere is being shaken rootely due to extra use of natural resources and overload malpractices for physical satisfaction by the solid sophisticated society. The follow up of glow and glamour and consequently degeneration of moral values and ethics, destruction of natural treasury and untimely collapse of the millions of living lives and imbalance of earth rotation are the views delineated in Gary Snyder's poetry. The central line of Buddhist philosophy 'Live and Let Live' and 'Altruism' as world religion on humanistic level and today's corroded and barren natural life in all sphere, caused by selfish modern generation which has uprooted the system of earth ecology. The preservation of primitive values in genuineness and urgency to restore the ancient glory of naturalness is finely woven.

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‘स्त्री – पुरुष तुलना : कोत्तापल्लेचे सटीप संपादन’



शंकर राऊत

सहयोगी प्राध्यापक मराठी विभाग प्रमुख, श्री शिवाजी महाविद्यालय, आकोट

श्रीमती ताराबाई शिंदे यांनी इ.स. 1882 मध्ये लिहिलेल्या ‘स्त्री-पुरुष तुलना’ या पुस्तकाची कॅलास पब्लिकेशन्सने काढलेली पहिली आवृत्ती : 1390 मध्ये तर दुसरी आवृत्ती : 1992 मध्ये प्रकाशित झाली अत्यंत महत्वाचे पण दुर्लक्षित राहिलेल्या या मौलिक पुस्तकाचे कोशल्यपूर्ण संपादन नागनाथ कोत्तापल्ले यांनी केले. संपादनाचे काम अतिशय निष्ठेने आणि जाणतेपणाने झाले असल्यामुळे अचूक झाले. अचूकता हा संपादनाचा पहिला गुण आहे आणि सशोधन संपादन कार्यात या गुणाचे मूल्य वादातीत आहे. अचूकता, समग्रता आणि साक्षेप हे या संपादनाचे विशेष सांगता येतील. हे विशेष कोत्तापल्लेनी या पुस्तकाला लिहिलेल्या प्रस्तावनेतून व पुस्तकाचे शेवटी दिलेल्या विस्तृत टीपातून प्रकट होतात.

या पुस्तकाला लिहिलेल्या ‘दोन शब्द’मध्ये कोत्तापल्ले म्हणतात, ‘संपादन करणे म्हणजे दोन-चार पानांची प्रस्तावना लिहिणे ही कल्पना मला पसंत नसल्यामुळे या ग्रंथातील सर्व संदर्भांचे माझ्यापरीने विवरण करण्याचे मी ठरविले कारण जुन्या काळातील अनेक संदर्भ उलगाडून दाखविल्याशिवाय मूळ ग्रंथच कळत नाही.

संपादनाच्या शेवटी विस्तृत टीपा क्रमवार दिल्या आहेत त्या विद्यार्थ्यांना व अभ्यासकांना उपयुक्त होतील असे वाटते

‘एकोणिसाव्या शतकाच्या विस्तृत पटावर ताराबाई शिंदे यांचा विचार करण्याचा प्रयत्नही प्रारंभी केला आहे. अभ्यासकांना हा प्रयत्न आवडल्यास सार्थक झाल्यासारखे वाटेल. पुस्तकातील लेखन नव्या नियमाप्रमाणे बदललेले नाही या बाबीचा निर्देश करणेही आवश्यक आहे असे वाटते.’ म. फुले यांनी गौरविलेल्या ‘स्त्री-पुरुष तुलना’ या उपलब्ध नसलेल्या ग्रंथाचे नागनाथ कोत्तापल्ले यांचे सटीप संपादन कोशल्य वाखणण्याजोगेच आहे.



स्त्री-पुरुष तुलनेच्या निमित्ताने - ही प्रस्तावना 34 पृष्ठांची असून तिची तीन विभागात मांडणी केली आहे. पहिल्या विभागात, एकोणिसाव्या शतकाच्या अनुषंगाने धार्मिक, राजकीय, सामाजिक परिस्थितीचा वेध घेतला, इंग्रजी राजवटीमुळे भारतीय जीवन बदलत गेल्याची नोंद कोत्तापल्लेनी सविस्तरपणे केली आहे. इंग्रजांनी शिक्षणासह जे जे केले ते सारेच सान्यांसाठी होते. पण येथील प्रस्थापितांना या समतेच्या गोष्टी होत असताना सतत आपल्या धर्मात सरकार हस्तक्षेप करीत असल्याची हाकाटी केली. ताराबाई शिंदे यांनी तत्कालीन 'वैभव' या वर्तमानपत्राचा संदर्भ आपल्या ग्रंथात दिला याची सटीप नोंद कोत्तापल्ले करतात.

पारिचम्याच विद्येमुळे धर्मातील अनेक कल्पना फोल असल्याचे लक्षात येऊ लागले. उदाहरणार्थ - 'शेषाच्या मस्तकावर पृथ्वी आहे.' भूगोलाच्या रीतसर अभ्यासकामुळे अशा भोंगळ कल्पना दूर व्हायला प्रारंभ झाला.

स्वातंत्र्य, समता आणि बंधुता या तत्त्वत्रयीचा परिचय फ्रेंच राज्यक्रांतीतून इंग्रजांद्वारेच झाला. हा एक पक्ष तर इंग्रजांनी भारताला कच्च्या मालाचा पुरवठा करणारा देश करून टाकला. हा दुसरा पक्ष दिसू लागला. आणि या दुसऱ्यापक्षांमुळे आर्थिक प्रश्न मोठ्या प्रमाणात निर्माण झाले. आर्थिक प्रश्नांबद्दल फारसे कोणी बोलत नव्हते परंतु ताराबाई शिंदे या कुशाग्र बुद्धिमतेच्या स्त्रीच्या लक्षात हा मुद्दा आलेला होता. असे म्हणावे लागते. त्या म्हणतात, आताचा सगळाच मनू पालटला आहे. इंग्रजांसारखे खुर्च्या, टेबल घरात ठेवू लागलो. त्यांच्यासारखे कपडे करू लागलो. याचा परिणाम अर्थव्यवस्थेवर झाला याची नोंद त्या घेतात. त्या म्हणतात, 'या तुमच्या भिकार चाळ्यांनी सर्व प्रकारचे आपले स्वदेशी रोजगार बुडून हर एक प्रकारचे व्यापारी व कसरी कारागीर लोक ऊपाशी मरू लागले. वैभव हटत चालले.' कोत्तापल्ले म्हणतात, अर्थ व्यवस्थेचा संदर्भ देणाऱ्या ताराबाई निश्चितच बुद्धिमान असल्या पाहिजेत यात काही शंका नाही.

येथील सनातन्यांच्या विरुद्ध बोलताना ताराबाई इंग्रज सरकारचीच बाजू मांडतात. त्या म्हणतात, 'अरे तुम्ही असे अट्टल हुशार कोल्हे, तरी इंग्रज सरकारचे, ईश्वर असे सदोदित चिरकाल राज्य कायम ठेवा. हा राजा (शककर्ता) झाल्यापासून रित्यांना विद्यादान देऊन त्यांची

मने नेहमी सर्व मानसिक व व्यवहारी प्रसंगात धैर्याने राहण्यास पुष्कळ तऱ्हेने बळकट झाली आहेत. त्यामुळे त्यांचे हृदयात जे अज्ञान वरून होते ते जाऊन त्यांना आता आपले बरे वाईट कोणाशी कसे वागावे, हा संसाराचा गाडा कसा हाकावा, सत्यता, स्वधर्म, पातिव्रत्य या विषयी त्यांना चांगले समजू लागले व त्यामुळे आपल्या या भारत खंडाची काही दिवसांनी स्थिती अगदी बदलून जाईल.

इंग्रजांबद्दल आणखी ताराबाई म्हणतात, 'अरे, ज्यांनी तुमच्या देशास देशाची व मनुष्यास मनुष्याची कळा आणून मनुष्य करून दाखविले. पूर्वी तुम्ही माणसेच होता पण अगदी विद्याहीन मूर्ख, जसे राक्षस तेवढे. मारावे नि मरावे हेच तुम्हाला ठाऊक होते. मरावेसाठीही जे बेबंद होते ते बंड मोडून तुम्हास विद्यादान कोट्यावधी रुपये खर्चून दिले. नाना प्रकारचे कला कौशल्य, कायदेकानू, ठिकठिकाणी कचेऱ्या दरबार करून सर्व स्वस्थता राखिली...रात्रिसो नव्याचे गोळे पाठीशी बांधून चालले जा. कशाची भीति नाही. असे हे जे संस्कार त्याने तुमच्या करिता तर सारेच सुखोपचार केले. आणि त्यांनी या धर्मात हात घालून अबलास सबला करून त्यांना तुमच्या या पोकळ धर्मरूप त्यांनी न सोडवावे तर कोण सोडवील बरे ?'

इंग्रज सरकार बदलची ताराबाईची मते अनुकूल असल्याबद्दलची सटीप नोंद कोत्तापल्ले करतात. तसेच इंग्रजांच्या आगमनापूर्वी समाजव्यवस्था ही धर्माधिष्ठित होती म्हणण्यापेक्षा ती पुरोहिताधिष्ठित होती. तसेच या देशात शतकानुशतके काहीही नवे संशोधन झाले नाही आणि आजही फार मोठ्या प्रमाणात होत नाही याचे कारणच मुळी इथल्या धर्मप्रभावात आहे. असे आपले मतही कोत्तापल्ले नोंदवतात.

19 व्या शतकापूर्वीचे सामाजिक जीवन आणि 19 व्या शतकातील सामाजिक जीवनाचा विचार केला तर असे दिसून येते की, येथील पिचलेला, दुबळा, गोरगरीब, दलित असा समाज इंग्रजांबद्दल सहानुभुती बाळगून होता. कारण येथील व्यवस्थेने कधी या माणसाला स्वातंत्र्य दिले नव्हते. शिक्षण दिले नव्हते. समानता आणि बंधुता तर नव्हतीच, म्हणजे स्वकियांची सत्ता आहे. पण बहुसंख्य समाज प्रस्थापितांचा गुलाम आहे, अशी परिस्थिती होती.

19 व्या शतकाची फलश्रुती सांगताना कोत्तापल्ले म्हणतात, लोकहितवादी, मज्योतीबा



फुले, ताराबाई शिंदे यांच्यासारखे विचारवंत इंग्रजाळलेले, ख्रिस्ताळलेले नव्हते, तर त्यांना समतेच्याही पलिकडे असणाऱ्या माणुसकीचे आकर्षण होते. समतेचे आणि खऱ्या अर्थाने स्वातंत्र्याचे आकर्षण होते. एकूण सत्तेच्या नकाशाच्या पलिकडे असलेला 'माणूस' हा सान्याच्या चिंतनाचा विषय होता.

प्रस्तावनेच्या दुसऱ्या भागात, इंग्रज राजवटीत शिक्षणाने प्रभावीत झालेला माणूस जागृत होऊन चळवळी करू लागल्याचे सांगितले.

कोत्तापल्लेंनी म. फुले परंपरेतील इतिहास मीमांसेची लक्षणे पुढील प्रमाणे सांगितली. धर्माच्या निमित्ताने दडपलेला इतिहास शोधून काढणे, भाकडकथांमागे दडपलेली सर्वसामान्य माणसाची मूळ प्रतिमा शोधून काढणे आणि शोषणासाठी घुसडलेला चमत्काराचा भाग दूर करणे. म. फुले यांच्या विचारांचा आणि अन्वेषण पद्धतीचा त्या काळातील कृष्णराव भालेराव आणि ताराबाई शिंदे या दोनच व्यक्तींवर सर्वाधिक परिणाम झाल्याचे कोत्तापल्ले सांगतात. बुद्धीच्या आधारे धर्मग्रंथाचा फोलपणा दाखवणाऱ्या परंपरेतील ताराबाई शिंदे ह्या एक होत त्यांनी आपल्या ग्रंथामध्ये पुरुषी समाजरचनेचा प्रभाव जीवनाच्या सर्व अंगावर पडत असल्याची सटीप नोंद केली. त्या म्हणतात, 'अर्जुनाने गोसाव्याच्या रुपात येऊन सुभद्रेस पळवून नेले; तेव्हा सारी लहान मुले म्हणू लागली की, आत्याबाईस गोसाव्याने नेले. येथे ताराबाई असा प्रतिवाद करतात की, गोसाव्यास आत्याबाईने नेले असे म्हणावयास काय हरकत आहे!' म्हणजे पुरुषी जीवनाच्या प्रत्येक अंगाची रचनाच, मुळी पुरुषी दृष्टीने झालेली असल्यामुळे स्त्रियांवर अन्यायच होतात हा ताराबाईचा मुख्य मुद्दा आहे. तसेच धर्माप्रमाणे आणि शास्त्रपुराणांप्रमाणे कोणी वागत नाही, परंतु पुरुषांचे वर्चस्व प्रस्थापित करण्यासाठी मात्र धर्म कायम पुढेच येतो. असेही त्या प्रतिपादन करतात. म्हणूनच कोत्तापल्ले ताराबाईबद्दल म्हणतात - पुरुषी दृष्टिकोणातून निर्माण झालेल्या समाजरचनेवर, धर्मग्रंथावर इतका कठोर हल्ला क्वचितच कुणी केला असेल. निदान महाराष्ट्रात तरी दिसत नाही.

कोत्तापल्लेंनी ताराबाईच्या विचारांचा आणि वाङ्मयाचा अतिशय शोधकपणे वेध घेतला. ते म्हणतात, स्त्रीवर होणाऱ्या अन्यायाला

वाचा फोडतांना ताराबाईची लेखणी अतिशय धारदार होते. क्वचित उपहास उपरोधाचे पाणीही तिला चढते. बोलीच्या वापराने ही लेखणी अधिकच शक्तीमान होते. परंतु या लेखनाचे खरे सामर्थ्य साठवले आहे ते, बुद्धिप्रामाण्यवादी विचारसरणीत, तर्ककठोर चिकित्सेत आणि मीमांसेत.

ताराबाईच्या ग्रंथातील मुख्य मुद्दा, खऱ्या अर्थाने कुटील आणि पापी (दुर्वर्तनी) कोण आहे? स्त्री की पुरुष?, यासाठी धर्म आणि धर्माचा प्रभाव वाढविणाऱ्या कथांचा परामर्श त्यांनी घेतला. धर्मतत्त्व पक्षपाती असून ताराबाईची भूमिका 'स्त्री-पुरुष' दोघेही एकमेकांस पुरक असल्याची आहे. त्यांनी त्यांच्या प्रस्तावनेच्या प्रारंभी म्हटले, 'ज्या परमेश्वराने ही आश्चर्यकारक सृष्टी उत्पन्न केली, त्यानेच स्त्री-पुरुष निर्माण केले. तरी सर्व प्रकारचे साहस दुर्गुण स्त्रियांचेच अंगी वसतात किंवा जे अवगुण स्त्रियांचे अंगी आहेत तेच पुरुषात आहेत किंवा नाहीत हे स्पष्ट करून दाखवावे याच हेतुने हा लहानसा निबंध मी सर्व देशभगिनींचा अभिमान धरून रचिला आहे; यात अमूकच जाती किंवा कुळ याकडे मुळीच लक्ष नाही, स्त्री-पुरुषाची तुलना आहे.' यावरून ताराबाई स्त्री म्हणूनच स्त्रीचा विचार करतात. जात किंवा कुळावरून नाही.

पुरुषाची वाढ स्त्रियांच्या दुधारवरच होते आणि स्त्री आदिमाया आहे, याची जाणीवही त्या करून देतात. पुरुष आणि स्त्री हे एकमेकांना अपरिहार्य आहेत ही गोष्टही त्या आवर्जून मांडतात. तरीही स्त्रीवर अन्याय का होतात? असा प्रश्न त्या उपस्थित करतात. आणि बुद्धीप्रामाण्यवादी दृष्टीतून त्या प्रश्नाचे उत्तरही देतात. पुरुषी वर्चस्व आणि स्त्रियांचे अज्ञान असे त्यांचे उत्तर असते. स्त्रियांना शिक्षण घेऊ न दिल्यामुळे त्यांच्यात अज्ञान वाढले व अज्ञानामुळे त्या भुलथापना कशा बळी पडतात याचे उदाहरणासह स्पष्टीकरण करतात. त्या म्हणतात, मूल व्हावे म्हणून एका स्त्रीने एका ढोंगी साधूच्या सल्ल्याने लहान मुलाचे मल प्राशन केल्याची घटना त्यांनी सांगितली आणि त्यावर भाष्य करताना त्या म्हणतात, 'तेव्हा तिला जर काही ज्ञानाचे अंग असते तर ती अशा कामास कधीच हाती न धरीती.'

पुरुषी अहकारानेच स्त्रीला अज्ञानात टाकिले असेही ताराबाईना वाटते. या पुरुषी



अहंकाराचा त्यांच्या वर्तनावर आणि स्त्रीकडे पाहण्याच्या दृष्टीकोनावर कसा परिणाम होतो याची मीमांसा त्यांना या छोटयाशा ग्रंथात केली आहे. हा ग्रंथ 1885 साली लिहिला असल्यामुळे तत्कालीन समाजाचे संदर्भ आणि तत्कालीन स्त्रीचे प्रश्न त्यातून येणे स्वाभाविकच होते. तसे ते आलेच आहेत याची उदारणांसह नोंद ताराबाईंनी आपल्या ग्रंथात केली आहे.

ताराबाईंच्या या लेखनामागील भूमिकेची मीमांसा करतांना विविध कारणांची सटीप नोंद कोत्तापल्लेंनी केली आहे. ते म्हणतात, ताराबाईंनी हा लेखन प्रपंच केला, त्याला तत्कालीन कारण घडले कुणी सुरतेच्या विजयालक्ष्मी नावाच्या स्त्रीने अनैतिक संबंधातून राहिलेला गर्भ पाडून टाकला होता. त्यातून तिला शिक्षा होते. आणि एकूण स्त्रियांसंबंधी मोठ्याप्रमाणात चर्चा सुरू झाली. याचवेळेचे निमित्त जरी या लेखनाला असले तरी ते काही एकमेव कारण नाही. सतत समाजामध्ये वेगवेगळ्या घटना घडतच होत्या. विचारवंत स्त्रियांच्या प्रश्नांबद्दल जागरूक झालेले होते. समतीवय काय असावे याची जशी चर्चा सुरू होती, त्या प्रमाणेच सतीप्रथा पुन्हा सुरू व्हावी असेही मत सार्वजनिक समेसारख्या समेतून सनातन्यांकडून मांडले जात होते. म. फुल्यांनी तर केशवपनाविरुद्ध न्हाव्यांचा संप घडवून आणला होता. कविते एखादा दुसरा पुनर्विवाहही होत होता आणि त्या निमित्ताने समाजात प्रचंड गदारोळ माजत होता. स्त्रीबद्दल उदार विचार करणारे एका बाजूला आणि सनातनी दुसऱ्या बाजूला संघर्ष समाजात सतत सुरू होता. या सुधारणांचा पुरस्कार करणारे अगर निषेध करणारे ललित वाङ्मयही काही प्रमाणात निर्माण होऊ लागले होते. तत्कालीन रंगभूमीवर अवतरलेले फार्स याची साक्ष देतात. 'विजोड जोडप्याचा फार्स' सारख्या फार्सांमधून सुधारणावादी दृष्टी प्रकट होत होती. तर 'मोर एलएलबी' सारख्या फार्सांमधून सनातन दृष्टी प्रकट होत होती. नाटकामध्ये 'मनोरमा', 'रवैरसकेशा' सारखी नाटके सुध्दा येऊ लागली होती. अशा स्त्रीसंबंधी सतत चर्चा झडणाऱ्या काळात म.फुले यांच्या अन्वेषण दृष्टीने प्रभावित झालेल्या ताराबाई शिंदे न लिहित्या तरच नवल होते!

या ग्रंथाला लिहिलेल्या प्रस्तावनेच्या तिसऱ्या भागात 'स्त्री-पुरुष तुलना' या ग्रंथाची

मर्मग्राही चिकित्सा केलेली आहे. 'स्त्री-पुरुष तुलना' या ग्रंथाचा प्रारंभ तत्कालीन वर्तमानपत्रातून स्त्रियांच्या दुष्टकृत्यांबद्दल बरेच काही छापून येते आणि महाअनर्थ मिटवून टाकायला कोणी पुढे येत नाही या प्रश्नाने होत. पुनर्विवाहाची प्रथा नसल्यामुळे असे प्रकार घडतात असे ताराबाई म्हणतात. स्त्री धर्माची पारंपरिक कल्पना आणि आजची स्त्री अशी तुलनाही त्या पुढे करतात. पारंपरिक स्त्रीधर्मांमध्ये नवऱ्याला देव मानले जाते. असे असले तरी पुरुषी अरेरावी कायम राहते. या महत्त्वाच्या मुद्यापासूनच पुरुषी संस्कृतीला तर्काच्या आधारे निरुत्तर करणारे प्रश्न ताराबाई विचारीत जातात. आणि मीमांसाही करतात. त्यांच्या या बुद्धीप्रमाण्यवादाची कोत्तापल्ले सटीप नोंद करतात.

ताराबाई, भारतीय पातळीवर पुनर्विवाहास परवानगी नसल्याने केवढे नुकसान झाले आहे हे वास्तव आपल्या बौद्धिक सामर्थ्याने लक्षात आणून देतात अंधश्रद्धा, धर्म, खुळघट कल्पनांवरही हल्ले करतात. स्त्रिया पुरुषांसाठी पुष्कळ करतात पण पुरुष त्यांच्यासाठी किती करतात असा रोकठोक सवालही त्या करतात. सावित्रीने यमाच्या दरबारातून नवऱ्याचे प्राण आणले, ही पुराणकथा सांगून त्यांनी प्रश्न केला आहे की, किती पुरुषांनी असे आपल्या बायकांचे प्राण आणले? वस्तुस्थिती मात्र अशी आहे की, पत्नीच्या मृत्यूनंतर लग्नच दुसऱ्या विवाहाला ते तयार असतात हे कडू वास्तवही सांगायला त्या विसरत नाहीत. येथे सान्या मानवजातीला एकच न्याय असला पाहिजे ही भूमिका त्या मांडतात.

या निबंधाच्या पूर्वार्धात स्त्रियांवरील अन्याय, खुळघट कल्पना, पुनर्विवाह निषेधामुळे वाटचाला येणारे दुःख, बाला जरठ विवाहामुळे निर्माण होणारे दुःख आणि या निमित्ताने पुरुषी वर्चस्वाला साथ देणाऱ्या धर्मग्रंथांचा विचार त्या अतिशय परखड भाषेत करतात. तर ग्रंथाच्या उत्तरार्धात स्त्रियांवर जे जे दोषारोप केले जातात, ते ते सारेच दोष केवळ स्त्रियांमध्येच नाही तर ते पुरुषांमध्येही आहेत असा तुलनात्मक विचार आला आहे आणि येथूनच पुढे खऱ्या अर्थाने स्त्री-पुरुष तुलना सुरू होते.

पुरुषांमध्येच मोठ्या प्रमाणात दोष सापडतात हे दर्शविण्यासाठीच त्यांनी आपले सगळे, चातुर्य, बुद्धिसामर्थ्य, शब्दसामर्थ्य आणि वादविवाद कौशल्य पणाला लावले आहे. आणि



सगळे दोष स्त्रियांमध्ये नाममात्र आहेत, उलट पुरुषांमध्येच ते भरपूर आहेत हे त्यांनी सप्रमाण सिद्ध केले आहे

एकंदरीत पुरुषी मनोवृत्तीचे, पुरुषी दृष्टीकोणातून निर्माण झालेल्या समाजरचनेचे, धर्मग्रंथाचे त्यांचे हे सारेच विवेचन निश्चितच अंतर्मुख करणारे आहे, यात शंका नाही. त्या काळाच्या तुलनेत ताराबाईंचे वाचन-विचार लक्षणीय होते त्यांना संस्कृत आणि मराठी साहित्याची चांगलीच जाण होती. विचाराची सुसंगत मांडणी हाही त्यांचा विशेष होय. या पार्श्वभूमीवर 'स्त्री-पुरुष तुलना' मधील त्या काळाच्या तुलनेतील विचारांचे नाविन्य, रोकठोकपणा, वास्तवाधिष्ठित विचार करण्याची पध्दती, चिकित्सक वृत्ती, वचनित आलेला आक्रमकपणा हे त्यांच्या व्यक्तिमत्त्वाचे सारेच विशेष मोहित करणारे असेच आहेत.

ताराबाईंच्या 'स्त्री-पुरुष तुलना' मधील शैली संबंधीही कोत्तापल्लेनी सटीप विवेचन केले आहे. 'संवादा' संबंधी कोत्तापल्ले म्हणतात, 'कधी स्वतःशी, कधी स्त्रियांशी, कधी देवाशी आणि प्रामुख्याने पुरुष वर्गाशी संवाद करीत लेखन केल्यामुळे ते परिणामकारक होते.' बुध्दीप्रामाण्यवाद आणि तर्क या बरोबरच उपहास आणि उपरोध ही ही या लेखनाची वैशिष्ट्ये सांगितली आहेत. मराठमोळ्या बोलीचा वापर, म्हणी, वाक्प्रचार उपमा-दृष्टांत यांचाही वापर त्यांनी केला आहे. 'लिहिता लिहिता ताराबाईंची लेखनी कधी कधी चिंतनाच्या पातळीवर जाते आणि सुभाषितवजा लिहून जाते.' असेही कोत्तापल्ले आपले सटीप मत नोंदवतात.

एकंदरीत ताराबाईंचे हे लेखन त्यांच्या काळापुरतेच महत्त्वाचे नाही तर एकूण मराठी निबंधांच्या आणि म. फुले यांनी विषमताविरुद्ध पुकारलेल्या लढ्याच्या दृष्टीने महत्त्वाचे आहे. त्यांनी तत्कालीन ललित वाङ्मय तर वाचलेच पण या वाङ्मयातील स्त्रीचित्रण खोटे, फसवे, अवास्तव, स्त्रियांवर अविश्वास प्रकट करणारे आणि स्त्रियांच्या समस्या नीट न समजून घेणारे आहे, अशी चिकित्साही त्यांनी केली आहे. त्याबरोबरच हे एकूण वाङ्मयच मुळी स्वप्नरंजनाच्या पातळीवर वावरणारे, वास्तवापासून शकडा घाजने दूर असलेले असल्याचेही त्या नोंदवतात. वस्तुतः तत्कालीन समीक्षेच्या दृष्टीने ताराबाईंचे वाङ्मयाचे आकलन चांगलेच म्हटले पाहिजे म्हणून त्यांना पहिल्या

'समीक्षिका' म्हणता येईल का? असे निर्भिड मत कोत्तापल्ले प्रतिपादन करतात.

एकंदरीत श्रीमती ताराबाई शिंदेकृत 'स्त्री-पुरुष तुलना' या मौलिक पुस्तकाचे नागनाथ कोत्तापल्ले यांचे सटीप संपादन कौशल्य अतिशय लक्षणीय असेच आहे. यात शंका नाही.

संदर्भ ग्रंथ :-

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ABSTRACT

बाबुराव बागूलांची 'सूड' ही साहित्यकृती 1970 मध्ये प्रकाशित झाली आणि अगत्यासक, समीक्षकांच्या 'सूड' च्यावेला विषय ठरली. चर्चेच्या अनुषंगाने 'सूड'ला दीर्घकथा, कादंबरीक, लघुकथा, कादंबरी असे संबोधण्यात आले. तेव्हा 'सूड' च्या आकृतीबद्दलचा अगत्यासक, समीक्षकांनी, काही विचार घेता केला काय याचा शोध घेणे 'सूड' च्या स्वरूप निश्चितीसाठी आवश्यक आहे.

'बाबुराव बागूल : व्यक्ती आणि वाङ्मय' या आपल्या संशोधनपर ग्रंथात डॉ. सुखदेव दाणके म्हणतात - "1970 साली प्रसिद्ध झालेली बाबुराव बागूल यांची 'सूड' ही दीर्घकथा कथा काव्याचा सुंदर नमुना आहे. कथा म्हणावे की काव्य अशी भावस्थिती प्रस्तुत कथा वाचतांना होते आणि हेच तर बागूलांच्या कथेचे खास वैशिष्ट्य आहे." तसेच "या कथेद्वारे बागूलांनी दलित कथेला 'निथक कथेचा आदर्श' घालून दिलेला आहे. एका अर्थाने ही कथा दलित निथक कथेचा आत्मविद्ही आहे." "संक्षिप्त वाङ्मय कोशात" म्हटले आहे की, 'सूड' या दीर्घकथेतील जाणकी ही लैंगिक शोषणाच्या चक्रातून पळवून निघते. नाट्यमय घटना, आवेगपूर्ण निवेदन, उत्कट, काव्यात्म भाषाशैली यामुळे बागूलांची कथा वैशिष्ट्यपूर्ण ठरते." "मराठी कथा : प्रवृत्ती आणि प्रवाह" या संशोधनपर ग्रंथात डॉ. रा.गो. खवरे म्हणतात, " 'सूड' ही बागूलांची एक उत्कट, आशयगर्भ, तळस्पशी, करुणरम्य दीर्घकथा." "जीवनाची वाटचाल निराशेकडून आशावादाकडे दाखविणारा दिव्यसंदेश ही कथा देऊन जाते." "दलित साहित्य : वेदना आणि विद्रोह या आपल्या समीक्षणपर ग्रंथात भालचंद्र फडके म्हणतात - "बाबुराव बागूलांची 'सूड' ही दीर्घकथा एका भीषण वास्तवाचे दर्शन घडविते." "सूड' ला लिहिलेल्या 'भूमिका' मध्ये डॉ. म. ना. बानखडे म्हणतात - "ही दीर्घकथा वास्तवतेत आकट बुडालेली, तरीही

वास्तवतेपासून दूर नेणारी." घरील समीक्षकांनी 'सूड' ला 'दीर्घकथा' संबोधिले आहे.

'स्वातंत्र्योत्तर काळातील मराठी कादंबरी' या आपल्या लेखात अविनाश सप्रे 'सूड' बदल मत नोंदवतांना म्हणतात - "या कादंबरीत जाणकी या मुलीची धक्का देणारी कथा सांगितली आहे. वयात आल्यापासून तिच्यावर पाशवी लैंगिक आणि मानसिक अत्याचार होत असतात आणि त्यातून तिचे आयुष्य कुस्करले जाते. वैरागी, साधू संन्यासी यांच्या दोंगी जीवनाची पार्श्वभूमी या कादंबरीला लागली आहे." "उर्जा श्रमिक मुखपत्र", या स्मरणिकेत नामदेव ढसाल म्हणतात, - "वाङ्मयीन सर्जनशीलतेच्या अर्थाने अत्यंत श्रेष्ठ कादंबरी अन् जीवनाचे वास्तववादी चित्रण या कादंबरीत बाबुरावांनी केले आहे." "बाबुराव बागूल आणि त्यांची साहित्य निर्मिती" या आपल्या लेखात डॉ. कृष्णा किरवले म्हणतात - "बाबुराव बागूल हे चिंतनशील कादंबरीकार म्हणून 'सूड' (1970) या कादंबरीपासून चर्चेत आले. पारंपरिक व्यवस्थेचे तत्त्वज्ञान हे पुरुषी अधिकारशाहीचे तत्त्वज्ञान असून ही व्यवस्था स्त्रीला पापी देह म्हणून संबोधले त्यामुळे अशा स्त्रीच्या देहावर पुरुषी अधिकार स्थापित करण्यासाठी धार्मिक परंपरांच्या माध्यमातून ते कसे परावर्तीत केले गेले त्याचेच एक रूप म्हणजे 'देवदासी' सारख्या प्रथा रूढ केल्या या अमानवी प्रथांनी स्त्रीत्वाची अवहेलना करण्यासाठी उपेक्षा जातीतील स्त्रियांचीच निवड करून तिला



सार्वजनिक उपभोगाची वस्तु कशी बनवली जाते याचे चित्रण 'सूड' मधून येते. देवदासी प्रथेत दलित स्त्री देहाची होणारी विटंबना आणि त्याच्या विरोधात 'सूड' घेण्यासाठी प्रवृत्त झालेले स्त्रीमनाची आंदोलने या कादंबरीतून चित्रित होतात. बागूल यांनी ही विषयवस्तू एकूण सोळा प्रसंगातून मांडली आहे. या प्रसंगाची मांडणी करण्यासाठी पूर्वसंदर्भाचे (प्लेशबॅक) तंत्र उपयोजिलेले आहे. या तंत्रामुळे या कादंबरीचा प्रवाहीपणा आणि परिणामकारकता टिकून राहिली आहे. मुळातच ह्या कादंबरीतील विषयाचा आवाका अधिक व्यापक व विस्तारित असताना त्यांना अत्यंत संक्षेपाने मांडण्याचे तंत्र बागूलांनी या कादंबरीसाठी उपयोजिले आहे. त्यामुळेच बागूलांची 'सूड' ही दीर्घकथा नसून 'लघुकादंबरी' म्हणून तिची गणना करणे आवश्यक आहे.<sup>10</sup> 'अभिजात कादंबरीकार : सूड' या लेखात सुधाकर गायकवाड म्हणतात - "बाबुराव बागूल एक महान साहित्यिक. 'सूड' त्यांची कादंबरीकित्या कीर्णकथा एक अभिजात कलाकृती. जागतिक अभिजात वाङ्मयात मोडेल अशी. अभिजात या अर्थाने की, तिचा आशय-रथाळ-कालातीत राहतो. ती मानवापुढे मूलभूत प्रश्न उभे करते. तिच्यातील सूचकता व्यापक असते. त्याच्यामागे लेखकाची अपार चिंतनशीलता असते." प्रतिष्ठान कादंबरी समीक्षा विशेषांक मध्ये गजमल माळी 'सूड' बद्दल आपली प्रतिक्रिया नोंदवतात. त्यांच्या मते- "श्री. बाबुराव बागूल यांची 'सूड' ही कादंबरी (खरं म्हणजे ही दीर्घकथाच आहे) 1970 साली प्रकाशित झाली."<sup>12</sup> "जे बाण मराठी साहित्यात फारसे फोफावले नाही. असा हा लेखन प्रकार बागूलांकडून अनेकांनी अपेक्षा व्यक्त केल्यामुळे म्हणा या लिहावयास बसले आणि रिते होईपर्यंत लिहित गेले. म्हणून म्हणा तरीही ती दीर्घकथाच राहिली"<sup>13</sup> गजमल माळी याच कथेच्या संदर्भात पुढे म्हणतात- "या दीर्घकथेचा प्रारंभ उत्तरार्धातल्या घटनांनी होतो आणि जानकीच्या पूर्वायुष्यातल्या एक एक आठवणी जीवनातल्या नव्या संदर्भात उकलत जातात. विभक्त व सुखद घटनांवर यादकांचे मन आंदोलत राहत. जानकीच्या जीवनाचा एकसंध परिणाम त्यामुळे मनावर होत नाही. संपूर्णकथा वाचून झाल्यावर जानकीच्या पूर्वायुष्यातील खोलवर जखमा करणाऱ्या घटना साफ पुरल्या जातात.... तसेच... ही दीर्घकथा सरळ निवेदनाच्या पातळीवरच राहते.

संघर्ष, त्याची खोली बाबुरावांच्या कथेत येणारी माणसांच्या भावनांची गुंतागुंत, जीवनातील पराकोटीचे चढउतार या कथेत येत नाहीत. ही दीर्घकथा 'सुबोध' कथा म्हणूनच जन्म घेते आणि जिथे तिचे हे कार्य पूर्ण होते तेथे ती संपते... या यात्रातील चित्रणातील एकसूरीपणा या दीर्घकथेला ठिसूळ करतो.<sup>14</sup> 'बाबुराव बागूल यांच्या साहित्याचा चिकित्सक अभ्यास' या आपल्या संशोधनपर ग्रंथात डॉ. नाझरेथ मिस्त्रिका 'सूड' बद्दल म्हणतात - "महाराष्ट्रातील नामवंत विचारवंतांनी वाङ्मयीन व समाजशास्त्रीय भूमिकेतून अभ्यासापूर्ण अशी प्रस्तुत कादंबरीवर चर्चाही केली आहे. हेच या कादंबरीचे, दीर्घकथेचे महानपण आहे.<sup>15</sup> पुढे नाझरेथ मिस्त्रिका लिहितात - "बागूलांच्या अनेक कथा मन उद्विग्न करतात. पण 'सूड' ही दीर्घकथा मात्र मनाला उन्नत करते. त्यातून मनाला समाधान लाभते. जाणारा तोंड सांभाळतो. अशा तऱ्हेने 'सूड' ही कादंबरीका बरेच काही सांगून जाते." तसेच "ही लघुकादंबरी अतिशय कलात्मक प्रत्ययकारीतेने व संयमाने रेखीव चित्रासारखी रेखाटली आहे."<sup>16</sup> तसेच "बाबुराव बागूल स्त्रियांच्या हालाखीच्या परिस्थितीवर 'सूड' ही दीर्घकथा लिहितांना. त्यातून उघड उघड लैंगिक वर्णन करणारी वाक्ये वापरतात. कथेची मांडणी वातावरण निर्मिती यासाठी जी आवश्यक त्यांना वाटली असावीत. स्त्री देहाचे, स्त्रीभोगाचे उघड उघड व स्पष्ट असे वर्णन बागूल करीत असल्यामुळे, त्यांच्या लेखनाला आलेले हे वैगुण्य वाजूला सारल्यावर, त्यांची भाषाशैली प्रभावी असल्याचे निदर्शनास येते. त्यातून 'सूड' ही कादंबरीका मराठी वाङ्मयात अजोड अमर कलाकृती असल्याचे सिध्द होते."<sup>17</sup> साहित्याचे निकष बदलावे लागतील या आपल्या समीक्षा ग्रंथात डॉ. शरणकुमार लिंबाळे म्हणतात - "बाबुराव बागूलांची 'सूड' ही लघुकादंबरी मार्च 1970 मध्ये प्रकाशित झाली आहे. बाबुराव बागूलांनी आपल्या तारुण्यात लिहिलेली ही कादंबरी आहे... सूड वाचल्यानंतर एक कादंबरी वाचल्याचे समाधान मिळत असेल तर 'सूड'ची पृष्ठ मर्यादा आपोआप गौण ठरते. कथेचा आशय विषय जर कादंबरीला साजेसा असेल तर दीर्घकथाही कादंबरीचे रूप घेऊ शकते. ह्याचे उदाहरण म्हणून 'सूड'चा उल्लेख करता येईल."<sup>18</sup> तसेच "ही कादंबरी एका स्त्रीने घेतलेल्या पुरुषाच्या सोगाची कथा आहे. ... आतापर्यंत भेटलेले पुरुष तिच्या रूपाकडे



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## नानासाहेब पेशव्यांच्या चुकीच्या धोरणामुळे मराठा आरमाराचा नाश

प्रशांत कोटे

इतिहास विभाग प्रमुख, श्री शिवाजी महाविद्यालय, आक्कोट.

**सारांश** - भारताच्या प्राचीन इतिहासाकडे पाहिले तर दक्षिण भारतात चोलांची सत्ता सामुद्रीक शक्ती साठी प्रसिद्ध असल्याचे दिसते. त्यांचे आरमार डक्कट होते. त्यांच्या भरवण्यावरच त्यांनी आग्नेय आशियातील अनेक बेटांवर जवळ जवळ १०० वर्षांपर्यंत राज्य केले होते. १२ व्या शतकांनंतर भारतीय सत्ताधिकांनी समुद्रकिनाऱ्याचे महत्त्व लक्षात घेतले नाही. परंतु १६ व्या शतकात जगाच्या इतिहासात सागरी वाहतुकीला महत्त्व प्राप्त झाले. पोर्तुगीज, डच, फ्रेंच, इंग्रज व्यापारात महत्त्व दिले. या सत्तांनी भारतीय किनाऱ्यावर व्यापारी व सामुद्रीक शक्ती केंद्रे निर्माण केली. ते सामर्थ्यसंपन्न व शक्तीशाली असल्याने तत्कालीन शासकांनी लक्ष न दिल्याने समुद्रकिनाऱ्यावर परकीय सत्तांचे वर्चस्व प्रस्थापित झाले. १७ व्या शतकात छत्रपती शिवाजी महाराजांनी स्वराज्य निर्माण करतांना या परकीय सत्तांशी संघर्ष झाल्याने त्यांना आरमाराचे महत्त्व लक्षात आले. या सत्तांना अटकाव केला नाही तर त्यांचे गंभीर परिणाम घडून येईल हे ओळखणारा तो पहिला शासक होता. म्हणूनच त्यांनी नौदल निर्मितीकडे लक्ष दिले. शिवाजींनी निर्माण केलेल्या शक्तीशाली नौदलाने परकीय सत्तांवर अंकुश निर्माण केला. त्याचे अनेक पुरावे परकीयांच्या पत्रव्यवहारात दिसून येत. परंतु या परकीयांच्या मनात धडकी भरणाऱ्या आरमाराचा पेशव्यांनी मात्र नाश केला व भारताचा वेगळा इतिहास निर्माण झाला. हा मराठा आरमाराचा नाश नानासाहेब पेशव्यांमुळे झाला. त्या नानासाहेबास दुरदृष्टीचा, मुत्सद्दी, चानास म्हटले आहे ते बरोबर दिसत नाही. हा या शोधनिबंधाचा विषय आहे.

### प्रस्तावना-

अनेक इतिहासकारांनी मराठ्यांच्या इतिहासात नानासाहेब पेशव्यांची मुक्तकंठाने स्तुती, वडवाह केलेली दिसून येते. काही इतिहासकारांनी तर शिवाजी नंतर निर्माण झालेल्या महादुरूप संशोधने आहे. संपूर्ण मराठेशाहीत नानासाहेब यांच्यासारखा दुरदृष्टीचा दुसरा पेशवा झाला नाही असेही संशोधनात. त्यांच्या काळात मराठेशाहीला उत्तुंग सिंहावर पोहचविणारा, संपूर्ण हिन्दुस्थानात मराठ्यांची हिंदुपरंपराशी निर्माण करण्याचे स्वप्न बाळगणारा म्हटले आहे. त्यांच्याच कारकीर्दीत मराठ्यांनी अटकेवर झेपे लावले.<sup>१</sup> म्हणूनच काही इतिहासकारांनी नानासाहेबांना दिग्विजयी संशोधने आहे. राजवाडे सारखे इतिहासकार आंध्र प्रकरणात 'एवढा चागाक्ष नानासाहेब पेशवा पण तो कसा चकला' असे उद्गार काढतात. तर मग खरोखरच नानासाहेब पेशवा दुरदृष्टीचा, चागाक्ष, मुत्सद्दी होता काय? यामुळेच नानासाहेबांच्या कारकिर्दीतील काही घटनांवर प्रकाश टाकणे आवश्यक आहे.





“राष्ट्रसंत आणि 1942 ची विदर्भातील स्वातंत्र्य चळवळ”

प्रशांत कोटे

इतिहास विभाग प्रमुख, कला, वाणिज्य व विज्ञान महाविद्यालय, आकोट जि. अकोला.

**सारांश :** महाराष्ट्राच्या इतिहासात संतांची कामगिरी फार महत्वाची आहे. पंधराव्या शतकात महाराष्ट्रात जी संत परंपरा निर्माण झाली, त्यांनी तात्काळीन परिस्थीवर जे प्रहार केले व हिंदू धर्माचे रक्षण केले. त्यामुळे महाराष्ट्रात हिंदू धर्म रक्षणाची प्रेरणा निर्माण झाली. महाराष्ट्रात जनजागृती घडून आणली. याचाच फायदा छत्रपती शिवाजी महाराजांना हिंदवी स्वराज्याची स्थापना करण्यात मदत झाली. ज्यावेळी महत्वाचा, आधिवाणीचा प्रसंग आला, त्यावेळी जनतेला मार्गदर्शन करण्याचे कार्य संतांनी केले. त्या अनुशंगाने विदर्भात 20 व्या शतकात संत गाडगेबाबा व राष्ट्रसंत तुकडोजी महाराज यांनी केल्याचे अनेक दाखले दिसून येतात. त्यांनी केवळ समाज सुधारण्याचेच कार्य केले असे नसून 15 व्या शतकात ज्याप्रमाणे मुस्लीम सत्तेपासून हिंदू धर्म रक्षणाचे कार्य करण्याची प्रेरणा दिली. त्याप्रमाणे भारतातून परकीय ब्रिटिश सत्ता घालवून देण्याच्या दृष्टीने मार्गदर्शनपर प्रेरणा ज्या संतांनी दिली. त्यात राष्ट्रसंत तुकडोजी महाराजांचा फार महत्वाचा वाटा आहे. त्यांनी 1942 च्या स्वातंत्र्य लढयाचे जे आंदोलन झाले त्यात जनजागृती करून जनतेला प्रेरणा दिली. ती 1942 च्या भारतीय स्वातंत्र्य चळवळीच्या इतिहासात फार महत्वाची मानली जाते.

**प्रस्तावना :-**

आज महाराष्ट्राच्या इतिहासात विदर्भाचे सामाजिक, सांस्कृतिक व राजकीय दृष्ट्या फार महत्वाचे स्थान मानले जाते. राजकीय सामाजिक, सांस्कृतिक व धार्मिक जडनघडनीत राजकीय नेत्यां प्रमाणे संतांच्या कार्याचेही फार महत्त्व आहे. त्या अनुशंगाने 1942 च्या भारतीय स्वातंत्र्य चळवळीत राष्ट्रसंतांचे विदर्भात महत्वाचे स्थान आहे. हे विसरता येत नाही. हे या शोध निबंधाचा मुख्य उद्देश आहे.

राष्ट्रसंत तुकडोजी महाराजांना महाराष्ट्राच्या इतिहासात समाज सुधारक व देशभक्त म्हणून पाहिले जाते. इ.स. 1920 नंतर भारतीय स्वातंत्र्य चळवळीचे नेतृत्व म. गांधींकडे आले. त्यांनी स्वातंत्र्य चळवळीत अहिंसा व सत्याग्रहाचा आधार घेवून असहकार, सविनय कायदेभंग व भारत छोडो आंदोलन. ही आंदोलने घडून आणली. त्यात राष्ट्रसंतांचाही सहभाग दिसून येतो. त्यांनी समाजाला सामाजिक गुलामगिरीतून मुक्त करण्याचा प्रयत्न बरोबरच देश हिताच्या कार्याला वाहून घेतले. आपल्या वाणीने, कार्याने जनसामान्यां मध्ये चेतन्य निर्माण करण्याचे कार्य केले. त्यांनी भजनाच्या माध्यमातून समाज प्रबोधनाचे कार्य करून जनतेत जागृती घडून आणली. त्यांनी विदर्भातील अनेक गावात जावून गुप्तरीत्या संदेश देण्याचे व मार्गदर्शन करण्याचे कार्य केले. समाज सुधारका प्रमाणे ते देशभक्त होते. त्यांनी देशभक्तीचा प्रचार करण्यासाठी मोठे परीश्रम घेतले. “स्वराज्याचे व सुराज्याचे यथोचित भान ठेवून ग्रामोन्नतीसाठी तळमळीने झटनारे तुकडोजी महाराज हे खरेखुरे संत होते”. त्यासाठीच त्यांनी गावोगावी जावून गुरुदेव सेवा मंडळे स्थापन केली. सविनय कायदेभंग चळवळीत सहभाग घेतल्या नंतर भारतातील अनेक देशभक्तांबरोबर त्यांचा संपर्क आला. त्यांनी गावोगावी जावून भजनांचे कार्यक्रम घेवू लागले. त्यांच्या भजनात विररसाचा वापर असल्याने जनतेत स्फूर्ती निर्माण केली. त्यातूनच विदर्भात यावली, चिमूर, आष्टी, येनोडा या सारख्या अनेक गावात ब्रिटिश विरोधी असंतोष निर्माण झाला.

राष्ट्रसंतांच्या भजना मध्ये राष्ट्रवाद ठासून भरलेला दिसतो. राष्ट्रप्रेमाची ज्योत त्यांच्या मनात सतत तेवत होती. जिवनाच्या प्रारंभी त्यांचे लक्ष देवदर्शनाकडे असले तरी नंतर ते देवात्माकडे वळले व देशालाच ते देव संबोधू लागले. देश सुखी व्हावा म्हणजे मानव समूह सुखी व्हावा या भावनेतूनच त्यांनी राष्ट्रवंदना रूजवली.

तन मन धन ते सदा सुखी हो भारत देश हमारा ।  
समी धर्म अरु पंथ पक्ष को, दिल से रहा पियारा ।  
विजयी हो, विजयी हो, विजयी हो, भारत देश हमारा ।।”





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इतिहास विभाग

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## RESEARCH PAPER IN HISTORY

## ABSTRACT

ABSTRACT

महात्मा गांधींच्या विचारानुसार 'स्वदेशी'चा प्रयत्न करायचे असले तर सत्ताप्रथाच्या माध्यमांचे प्रत्यक्ष केलें जाऊ शकतें. 'सत्ताप्रथा' हाच अर्थीय सामान आहे. ज्याद्वारे स्वदेशी प्रयत्न होऊ शकतें. सत्ताप्रथामाने विदेशी वस्तुया वस्तुयांचा विदेशी विमर्शाचा बहिष्कार, विदेशी सत्तेचा बहिष्कार सामर्थ्य मिळते.

महात्मा गांधी, स्वदेशी, सत्ताप्रथा, सत्ता, स्वदेशी, धर्म, सिध्दांत, गांधी, तर, स्वदेशी

स्वदेशी विभागाच्या बाबत मजबूतपणे  
लोकांमध्ये जागरूकता उत्पन्न करावी. म्हणून स्वदेशी या  
संगठनेच्या विभाग कार्याला सुरुवात. राष्ट्रीयी-  
य स्वदेशी विभाग आम्हाक स्वतःच्या केवळ देशात  
ही स्वदेशी या भागाक स्वतःच्या देशात यादीत  
होण्या भावीत तर स्वदेशी या भागाक, आर्थिक,  
राजकीय, नाच, साम्यवादी, आर्थिक, आर्थिक, आर्थिक  
सर्व गोष्टी आणून देण्या या राष्ट्रीयीय भाग स्वदेशी  
एक राष्ट्रीयीय भाग आहे या लोकां स्वदेशी या  
भागाच्या कार्याचा भाग होऊन जाई. विदेशी वस्तु  
सुद्धा सर्व वस्तु देशात आणण्या वापरण्या गोष्टी  
होण्या आहे. स्वदेशी या भागाच्या कार्या  
आणण्याच्या लक्षणांनी वापरणे गरजेचे आहे.  
विदेशी वस्तु या आणण्याच्या जाग्यात देश गरिब  
होण्यात आणून म्हणून स्वदेशी या प्रत्येक विदेशी  
वस्तुचा बहिष्कार करतो, मात ही वस्तु विलोप  
प्रकारक असली. या राष्ट्रीयीय भाग आणून  
देशी वस्तु देण्यासाठी वापरणे आणून  
देशीय आणून देश ही तर दोन विभागा आहे.  
आम्हा या भाग लोकांनी देणे पाहिजे. ५

स्वदेशी म्हणजे स्वाधीनता कोणतेच  
स्थान नाही. स्वदेशी सर्वांनी तैदा करणं याचें सर्वोप  
क्रम आहे. स्वदेशीया खरा समर्थक कधीही कुणा  
विषय विरोधाची भावना प्रकट करणार नाही.

कारण स्वदेशी भुज्या सिखात नाही तर स्वदेशी विषयां संबंधी सिखात आहे. ज्याचे मुळ अर्थशेव्या प्रेमान्धे आहे. ६ राष्ट्रीयीकृत वटले आहे की भारत किंवा दुसरा कोणताही देश दुसऱ्यासाठी आलेली हाक्की आणि सामग्र्यां वगैरे लुकावण करू शकते. जेव्हा तो देश स्वतःचे पालनपोषण करत, करून शकत, स्वतःच्या आवश्यकतेच्या वस्तु स्वतः निर्माण करू शकत, असे जर झाले तर त्या देशाचे विनासकारी शैथिल्य प्राप्तीयोग्यतामुळे भाग घेण्यापासून गुराव पडणार नाही.

स्वदेशी सिध्दांत घाम केडीत  
अर्धवर्षाच्या क्षेत्रात महत्त्वपूर्ण आहे. "स्वदेशी  
स्वदेशीच्या मनातील ती भावना आहे जी आपल्यावर  
आपल्या जवळ असलेल्या क्षेत्रातील वस्तूंचा उपयोग  
करण्यावर आणि लोकांशी सेवा करणे ही भावना  
घटवून करते आणि सुरक्षा वस्तु आणि लोकांना  
सोडण्याची प्रेरणा निर्माण करते." \*

તવદેશી ધર્મ વિદેશીયા વિલક્ષ્ય નાહી પરંતુ તરીકે  
સ્વદેશી શત્રુપૂર્ણ દેશી નાહી કારણ અસે હોયે  
અર્થમાં આરે, સવોદે કરત અસત્યાન સ્વદેશી હોત  
નાહી આજિ સ્વત્વ યે હી હોત નાહી પમ સ્વત્વ કરત  
રાહતોન સવોદે હોતપ રાહતે, સવોધ્યા કરનાયા હા  
પ્રક ધ્યાયા આરે, માદ્યાસાદી સર્વ બરોજ આરે હ  
મુળ ધ્યાયા અધિકાર સ્વાભાવ આરે, ય્જાને આપ્ય



आधुनिक भारतातील उदारमतवादी लोकशाही विचार



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ABSTRACT

एकोषिसाव्या शतकात भारतात ज्या धार्मिक, सांस्कृतिक व सामाजिक चळवळी सुरू झाल्या त्यामुळे ब्रिटीश उदारमतवादाच्या प्रभावानुसार निर्माण झाल्या त्यामुळे परंपरागत समाजव्यवस्था, गुलामगिरी, लढी, परंपरा यांची नव्या संदर्भात फेरितपासणी व पुनर्गठनाकडे कलून त्यांची पुनर्मांडणी करण्यासाठी नव्या चळवळी सुरू झाल्या व नव्या संघटना पुढे आल्या, प्रांतीय या प्रयत्नांचे स्वल्प धार्मिक व सामाजिक होते परंतु हळूहळू आर्थिक व राजकीय क्षेत्रातही नवे विचार, नवे दृष्टीकोन पुढे आले व कालंतराने त्याला व्यापक राष्ट्रवादी आशय प्राप्त झाला.

इंग्रजीतील - (Ideology) या शब्दापासून मराठीतील विचारप्रणाली हा शब्दप्रयोग आला आहे. Idea म्हणजे विचार आणि logy म्हणजे शास्त्र म्हणून विचारप्रणाली म्हणजे विचारांचे शास्त्र, असा विचारप्रणालीचा अर्थ आहे. जसे धार्मिक विचारप्रणाली, आर्थिक, सामाजिक सांस्कृतिक इत्यादी.

डेव्हिड अँडर या विचारकाच्या मते विचारप्रणालीचा संबंध मणसाच्या श्रद्धा, विश्वास यांच्याशी असतो.

पॅडलफोर्ड आणि लिक्न यांनी "आर्थिक, सामाजिक राजकीय मूल्ये आणि उद्दिष्ट यांच्या संबंधीचे विचार आणि मूल्ये या विषयीची योजना राजकीय विचारप्रणाली होय." अशी व्याख्या केली आहे.

गॅरी के ब्राऊनिंग 'मानवी स्वभाव तसेच ऐतिहासिक विकास, याबाबतचे दृष्टिकोन विशद करणाऱ्या राजकीय कृतीच्या कार्यक्रमांचा ज्यात अंतर्भाव असतो अशा राजकीय श्रद्धांच्या संचाला राजकीय विचारप्रणाली म्हणतात.'

थोडक्यात राजकीय विचारप्रणालीचा संबंध मूल्ये उद्दिष्टे, श्रद्धा अशा घटकांशी असतो. राजकीय विचारप्रणाली दोन पातळीवर अस्तित्वात असते. एक मानसिक, नैतिक, आशयात्मक पातळी आणि दोन म्हणजे वर्तन, कृतीकार्यक्रम योजना यांची पातळी होय.

राजकीय विचार प्रणालीचे महत्त्व : विचारप्रणालीचे महत्त्व सर्वसामान्य लोकांना आणि राजकीय

नेत्यांनाही सिध्द झाले आहे. प्रत्येक राजकीय नेता आपले नेतृत्व स्विकारण्याजोगे बनवण्यासाठी विचारप्रणाली विकसीत करतो किंवा एखाद्या रुढ विचारप्रणालीला आत्मसात करून लोकांचे संघटन करतो. विचार प्रणालीचे मतशिक्षण करण्यासाठी प्रतिके, मिथिके, चिन्हे, घोषणा, आदर्श वाक्प्रचार पुराणकथा इत्यादींचा वापर केला जातो. त्यातून भावनिक आव्हान गुंगवून टाकले जाते.

रशियाचा क्रांतिकारी नेता लेनिन, चिनमधील क्रांतिकारी आणि एकेकाळचा सर्वोच्च माओ-त्से-तुंग यांनी साम्यवादी विचारप्रणाली अशा रीतीने लोकांच्या गळी उतरवली पं. नेहरू, हिटलर, मुसोलिनी, इंदिरा गांधी, जयप्रकाश नारायण अशा अनेक वलयांकित नेत्यांनी आपल्या विचारांनी, कार्यशैलींनी लोकांना मंत्रमुग्ध केले होते. बँटकिन्स या अभ्यासकाचा मते विकसशील देशांसाठी विचारप्रणालीचे विशेष महत्त्व व स्थान आहे. साम्राज्याच्या जोखडातून मुक्त होण्यासाठी या देशांनी उदारमतवादी लोकशाही विचार प्रणालीचे स्वातंत्र्य आंदोलन उभारले.

भारतासह आशिया व आफ्रिका खंडातील अनेक देशांमध्ये या दृष्टीने विचारप्रणालीने मोलाची भर घातली आहे. आधुनिकीकरण, धर्मनिरपेक्षवाद जागतिकीकरण यांचा स्वीकार या देशांनी केला आहे.

उदाहरणतया :-

औद्योगिक क्रांतीनंतर इंग्लंडमध्ये उदारमतवादाची प्रगती झाली आणि त्या नंतर ही विचारप्रणाली



तत्वे विशद करून प्रतिनिधीक शासनाच्या उभारणीत विभिन्न मार्ग सुचविण्यातही उदारमतवादाने महत्त्वपूर्ण भूमिका पार पाडली. कामगारांचा, उद्योजकांचा वर्ग व नव्याने पुढे आलेला मध्यमवर्ग या वर्गांची देखील उदारमतवादाने योग्य प्रकारे घेतली.

**संदर्भ ग्रंथ सुची :-**

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लोकसभा निवडणुक २०१४ सत्ताबदल आणि अपेक्षा

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ABSTRACT

भारतीय लोकशाही राज्यात सन २०१४ साली लोकसभा निवडणुक झाली ती केवळ निवडणुक नसून शासनाकडून असलेल्या लोकांच्या अपेक्षांचे वास्तव आहे. शोषण, दारिद्र्य, भ्रष्टाचार, महागाई, घोटाळे, जातीय तेढ, धर्माधत्ता राजकीय मक्तेदारी, घराणेशाही, विकासाचा केवळ बागुलबुवा इत्यादीना जनता कंटाळली होती. आपल्या मतांचा वापर केवळ निवडणुकीपुरताच होतो, आपसात जातीय तेढ जाणिवपुर्वक निर्माण केली जाते, भ्रष्टाचारी नेत्यांना अभय मिळते, देशाची तिजोरी रिकामी आहे पण नेते अब्जाधिश झाले. हे सर्व जनतेच्या लक्षात आल्यामुळे, सन २०१४ च्या निवडणुकीमध्ये सत्ताधारी काँग्रेस व मित्रपक्षांना जनतेने चांगलाच हिसका दाखविला व सत्तेवरून खाली खेचले.

प्रस्तावना:-

गुजरातमध्ये सलग चार वेळा एकहाती सत्ता मिळवणारे तेही एकट्याच्या भरवशावर सत्ता काबीज करणारे नरेंद्र मोदी लोकांच्या नजरेत भरले, केन्द्र सरकार व भाजप मधील वरिष्ठ मंडळी नरेंद्र मोदींच्या विरोधात असुनही व गुजरात मध्ये दंगली होऊनही तेथील सत्तेवर मोदींच्याच अंकुश राहिला आहे. एवढेच नव्हे तर केन्द्रीय आर्थिक पाठबळ नसतानाही इतर सर्व घटकराज्यांच्या तुलनेत गुजरातची सर्वच क्षेत्रात झालेली भरभराट कुणाच्याही नजरेत भरणारी आहे. त्यामुळे जनतेच्या अपेक्षा मोदीबद्दल वाढणे स्वाभाविक आहे. शिवाय सत्ताधारी काँग्रेसने सुद्धा मोदींचा धसका निश्चितच घेतला होता. मोदी जातीय व धर्मवादी असल्याचा प्रचार काँग्रेस व मित्र पक्ष करीत होते. पण जनता या गोष्टीला पुरती कंटाळली होती, त्यांना केवळ आणि केवळ मोदींचा गुजरात, त्यांचा विकास दिसत होता. त्यामुळे संपूर्ण देशात, जनमानसात मोदी आदरस्थान वनले होतेहे कुणाच्याही लक्षात आले नाही. निवडणुक निकालानेच ते दाखवून दिले सोबतच देशाच्या विकासाच्या अपेक्षांचे ओझे नव्हे तर विस्थास जनतेनी मोदींच्या खांद्यावर टाकला एवढे मात्र स्पष्ट आहे.

काँग्रेस पक्षाची पिछेहाट:-

स्वातंत्र्य प्राप्तीनंतर केवळ काँग्रेस पक्षाचाच प्रभाव भारतीय राजकारणावर राहिलेला आहे. १९६७ पर्यंत संपूर्ण देशात (केंद्र व राज्य) काँग्रेसचीच सत्ता होती. प.नेहरु व इंदिरा गांधी यांची पक्षावर व शासनावर पूर्ण पकड होती. त्यांच्या प्रभावाचा फायदा स्व. राजीव गांधी यांनाही झाला. सहानुभूतीचा परिणाम म्हणुन नरसिंहराव यांनी नेतृत्व केले. पण याच काळात काँग्रेसची पिछेहाट सुरु झाली. सोनीया गांधी राजकारणामध्ये प्रभावी किंवा परिपक्व नसल्यामुळे आपल्या पक्षावर पाहीजे तेवढी मजबूत पकड ठेऊ शकल्या नाही. त्यामुळेच मित्र पक्षावर आपला प्रभाव पाडू शकल्या नाहीत. सोनियांच्या नेतृत्वात काम करण्यापेक्षा अनेकांनी आपल्या प्रादेशिक अस्मितांच्या आधारे आपआपले पक्ष मजबूत केले व आपल्या राज्यात त्यांचा प्रभाव वाढविला, त्याचा परिणाम म्हणुन काँग्रेस पक्षाला मित्र पक्षांची सोबत करुनच निवडणुका लढविणे भाग पडले. एकट्या काँग्रेस पक्षाला बहुमत मिळू शकले नाही.

सन २००४ व २००९ च्या लोकसभा निवडणुकीत मनमोहनसिंग यांच्या नेतृत्वात काँग्रेसने सत्ता भोगली असली तरीही त्याकाळात प्रादेशिक पक्ष व नेत्यांचाच प्रभाव वाढल्यामुळे व त्यांच्याच बळावर सत्ता टिकून असल्यामुळे काँग्रेस पक्षाला आर्थिक, राजकीय स्वरूपाच्या तडजोडी त्यांच्या सोबत कराव्या लागल्या. भ्रष्टाचाराची प्रकरणे झाकावी लागली. सोनिया गांधींचे जावाई सुद्धा भ्रष्टाचाराच्या प्रकरणात अडकले गेले. राहुल गांधी अतिशय नवखे व अनुभवी असल्यामुळे पक्षावर व शासनावर पाहीजे तेवढा प्रभाव पाडू शकले नाहीत. करोडोंचेच घोटाळे उघड होत गेले, मनमोहनसिंग आपल्या नेतृत्वगुणांची छाप देशातर्गत व परराष्ट्रीय धोरणामध्ये पाडू शकले नाहीत. नेत्यांच्या व मंत्र्यांच्या भ्रष्टाचाराकडे जाणुन बुजून दुर्लक्ष करणारे व सोनिया गांधींचे बोलविते बाहूले म्हणून त्यांची प्रतिमा संपूर्ण देशात तयार झाली. या सर्वांचा राग जनमानसामध्ये रुजत गेला व २०१४ च्या निवडणुकी काँग्रेसची पुर्ण पिछेहाट झाली.

नरेंद्र मोदींचा प्रभाव व भाजपाचे यश:-

गुजरातमध्ये सतत चार निवडणुकामध्ये भारतीय जनता पक्षाला बहुमत मिळवून देण्यात नरेंद्र मोदी यांचाच मोठा वाटा आहे. गुजरातचे मुख्यमंत्री म्हणुन काम करतांना केंद्राकडून अडवणुकीचे धोरण आणि स्वपक्षामधुनही होणारा विरोध यावर मात करीत गुजरात सर्वांगीण विकासात संपूर्ण देशात अग्रस्थानी पोहोचला. नरेंद्र मोदींची कार्यशैली, सचोटी, मेहनत, जिद्द, दुरदृष्टी आणि विकासाची योग्य दिशा व नेतृत्व कौशल्य इत्यादींचे दर्शन देशातील संपूर्ण जनतेला झाले. नरेंद्र मोदींनी देशाचे नेतृत्व करावे अशी अपेक्षा गुजरात मधील जनतेनी व्यक्त केली व त्याला देशातील जनतेनी पाठींबा दिला. २०१४ च्या लोकसभा निवडणुकीच्या १ वर्षांपूर्वीपासुन मोदींनी राष्ट्रीय स्तरावर आपली पकड मजबूत करण्यास प्रारंभ केला. काँग्रेस पक्षाच्या मतांच्या नियोजनाचा सुक्ष्म अभ्यास केला. त्यांचे घोटाळे, अकार्यक्षमता, निष्क्रियता घेरुन संपूर्ण देशात प्रचार सभांना प्रारंभ केला. सर्वप्रथम हैद्राबाद येथून प्रचार सभांना सुरुवात केली. पहिल्याच सभेपासून एक रुपया तिकीट घेऊन लोक सभेला हजर राहत होते. शब्दांचा अचूक मारा करुन जनमत जिंकण्याचा सपाटा सुरु झाला.



जवळजवळ सहा महिने काँग्रेस व मित्र पक्ष गाफील राहिले नव्हे तर सोनीया, प्रियंका व राहुल यांच्या करिष्मानेहमी प्रमाणे तारणार याच भ्रमात राहिले. मोदी अस्त्रापुढे काँग्रेस व मित्र पक्ष काहीही जबाबी शब्द देऊच शकत नव्हते. मोदी हे धर्माधवादी आहेत एवढाच काय तो प्रचार करित होते. परंतु त्याचा उलट परिणाम झाला. काँग्रेसनेच आपर्यंत जातीयतेचे राजकारण करून लोकांचे जाती-धर्मात विभाजन केले व त्यांची मते आपली Vote Bank बनविली हे जनतेच्या लक्षात आले होते. २०१४ लोकसभा निवडणुकीत एका पक्षाला बहुमत मिळेल असे कुणालाही वाटले नव्हते. काँग्रेसच्या काळात पंतप्रधान पदाची धुळीस मिळालेली प्रतिमा, भ्रष्टाचार, अकार्यक्षमता इत्यादींचा परिणाम व मोदींचे नेतृत्व, वक्तृत्व याची जनतेवर पडलेली छाप यामुळे गेल्या ३० वर्षांपासून जे कोणत्याही एका पक्षाला बहुमत मिळू शकले नव्हते. केवळ आघाडी शासनाचेच युग होते त्याला छेद दिल्या गेला. २८२ जागा जिंकत लोकसभेत मोदींच्या नेतृत्वात भाजपने पूर्ण बहुमत प्राप्त केले. संपूर्ण देशात एक उत्साहाचे व विकासाच्या आशेचे वातावरण निर्माण झाले.

**मोदींच्या विकासात्मक योजना व लोकअपेक्षा:-**

लोकांनी निवडणुकीच्या माध्यमातून विकासाची जबाबदारी एकप्रकारे मा. नरेंद्र मोदी यांचेकडेच सोपविली आहे. म्हणून २०१४ ची लोकसभा निवडणुक फक्त निवडणुक नसून लोकांच्या अपेक्षांचे वास्तव आहे. भ्रष्टाचार, जातीय तेढ, निष्क्रीयता, महागाई घोटाळे, घराणेशाही, इत्यादींना जनता कंटाळलेली होती. त्याचाच परिणाम मतपेटीच्या माध्यमातून दिसला व भाजपला पूर्ण बहुमत प्राप्त झाले.

गेल्या एक वर्षात मा. प्रधानमंत्री २० देशांचा दौरा करून आले. "मेक इन इंडीया" च्या माध्यमातून परकीय गुंतवणूक, उद्योग, सेवा क्षेत्रात विश्वासाचे वातावरण निर्माण केले, स्वच्छभारत अभियानाच्या माध्यमातून महीलांसाठी स्वच्छता गृहे, शौचालयांची निर्मिती, नद्यांचे शुद्धीकरण, बेटी बचाव, बेटी पढाओ योजना, सुकन्या योजना, महिलांसाठी व्याजदर कपात, जनधन योजना, असंघटीत कामगारांना अटल पेंशन योजना, कामगार कायद्याचे मॉडेल, विदेशी गुंतवणुकीस विदेश दारे व "मेक इन इंडीया", शेतकऱ्यांना देण्यात येणाऱ्या मदतीच्या निकषांमध्ये परिवर्तन, प्रकीया उद्योगांना चालना, संशोधनाकरिता शिष्यवृत्ती, कौशल्य शिक्षण विकास, रोजगार निर्मिती वर भर, स्वयंम-साक्षांकन योजना, डिजिटल इंडीया, नमामी गंगे, इत्यादी अभिनव व प्रभावी योजनांची निर्मिती एका वर्षाच्या काळात करण्यात आलेली आहे. योजना साकार होणे हे सुद्धा महत्वाचे असते. हीच 'अच्छे दिन' चा मार्ग आहे. लोकांच्या अपेक्षेनुसार योजना तयार झाल्या. आता त्याची अंमलबजावणी योग्यरित्या करणे आवश्यक आहे. तेव्हाच 'अच्छे दिन'ची प्रत्यक्ष सुरुवात होईल.

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- ४) भारतीय लोकशाही- स्थिती आणि गती- चिन्मय प्रकाशन औरंगाबाद



## MODERN CHANGES IN INDIAN MUSIC

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Today these is acriticateriad for indian music. The impact of the west has shaken its foundations more drastically than foreign influences have ever done before. Mistaken attempt to foist the finished Western system of harmony on to the half perfect modal system of indian monophony have been made for the last hundred years, not only by missionaries but also by enthusiastic Indian admirers of Europeans culture. In these process the delicate structure of Indian music is crushed out of existance. Lately the music of the films and jazz with its course appeal, have not beckoned in vain. In this unfortunate development the radio plays the significant part, but it also gives the champions of the severel classical style an appportunity to reach the ears of a great many more people than would have the appportunity to hear this music in olden days. The medieval attitude of a master teaching only a few chosen pupils and not divulging his best to the uninitiated is still strong. Music for the masses is a very recent trend, and music teaching now tends to move away from the intimate teacher pupil connexian towards class -teaching in school and colleges. A particular amount of standardization has been unavoidable in the course of this development. Eminent men such as the late Pt. Bhatkhande a mahratta by birth but with very influence over the whole of north of Lucknow have striven to find a common denominator of the different current tradition of ragas and raginis and fix them by means of notation, which had not been done systematically in the past. Yet the basis of the present system of notation is very ancient. It is a tonic solfa system in which the names of the notes sa and so on are utilised to connate the melodic line with its time divisions.

New developments breaking away from the tradition system are not lacking. The very perfection of the system precluded further development and adventurous spirit have had to look for new avenues for their creative impulses. They have but rarely understood that the new developments must have their roots in Indian music itself to be viable, yet there are indication that understanding is dawning. After a period of Western influence Ravindranath tagore turned to the folk melodious of Bangal for inspiration, and all over India isolated poets and musicians are draving their stength from the music of the people, often with very felicitous results. For Indian folk music, which ranges from the primitive two -note sing song of the Chencus of the Jungles of Hyderabad to the stirrings war ballads of the boards of Rajasthana and the mystical longing of the princess saint Mirabai, is an expression of the whole life of the people with their joys and sorrows. It is the depository of their traditional



wisdom and their religious yearnings as well as the pleasures and pastimes of everyday life.

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## INSTRUMENTAL MUSIC OF INDIAN ✓

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Indians use ancient music instruments as well as modern electronic music instruments. Moreover all types of instrumental music is getting popular. All music educational institutions usually have at least two separate departments one for vocal music and the other for instrumental music. These factors compel the librarians for considering the instrumental music as a fully developed discipline and shelve these books separately. The music instruments may be divided in groups on the basis of origin, material used, mode of playing and many more. The Chinese have classified their music instruments in to eight groups on the basis of nature of material used. The Europe too, numerous music classification schemes have been evolved. But all these do not suit the Indians ones.

The twentieth century has been a century of inventions and new discoveries. The rapid and revolutionary advances in the field of micro electronics paved the way for phenomenal progress in the field of musical instruments in recent times. Initially we had electric instruments that mean music instruments whose sound was produced mechanically and only amplified or altered electronic guitar. An electronic instrument may include a user interface for controlling its sound, often by adjusting the pitch frequency or duration of each note. Now electronic music instruments are widely used in European and American countries. In India musicians use electronic musical instruments in light music programmes. As far as classical music concerned these are in little use. Indian authors writing books on Indian music instruments have not discussed electric or electronic music instruments. Prof. Suneera Kasliwal has devoted one chapter to such music instruments. She has furnished details of some electronic musical instruments that are being used for Indian classical music concerts. Some of these are Saarang (Electronic Tanpura), Dhruva (Electronic Surpeti) and Taanmala (Electronic Tabla). The electronic musical instruments with traditional one. These are electricity based, most of these have keyboards as input device, these consist on very complicated electronic system. These are manufactured by technical person.

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## संगीत और मनोवैज्ञानिक चिकित्सा

प्रा. संतोष ना. वावगे  
श्री. शिवाजी महा., अकोट

यह बात विभिन्न तथ्योंको ध्यान में रखते हुये सिद्ध हो चुकी है की हमारे स्वभाव का हमारे स्वरपर बड़ा असर पड़ता है। यहाँ हम उन मनोवैज्ञानिक उपायों और साधनों पर विचार करेंगे, जो स्वर को सुरीला बनाने में सहायक हो सकते हैं।

यह सर्व मान्य है की अच्छा गायक या वक्ता बनने के लिए हमें अपने स्नायुओं पर पुरा-पुरा अधिकार प्राप्त करना चाहिए। ऐसा करने के लिए इच्छा शक्ति का प्रबल होना अनिवार्य है। स्वर साधना स्नायविक दुर्बलता को दूर करने का एक साधन है। आज के युग में मनोविज्ञान ने इतनी उन्नती करली है कि उसके द्वारा अनेक शारीरिक रोगों का उपचार भी होने लगा है। इंग्लैंड के प्रसिद्ध डॉक्टर ने एक बार कई रोगियों पर अपने अस्पताल में मनोवैज्ञानिक परिक्षक किए। डॉक्टर नित्यप्रति आकर रोगियों का तापमान लेता था और हमेशा रोगियों को तापमान की गलत खबर देता था। इसी प्रकार निधत्यप्रती वह रोगियों को विभिन्न रंग और स्वादों का सादा पानी दवा के नाम पर पिलाने लगा। रोगी को देखते ही वह कहता - "आज तुम्हारे चेहरे पर रौनक है ---- बुखार भी तुम्हारा कम हो गया है। अब तुम अच्छे हो रहे हो।"

उसके इस परिक्षण का परिणाम यह हुआ कि ५० प्रतिशत रोगी तो बिना किसी औषधी के ही

अच्छे हो गए। केवल उन रोगियों को औषधी देने की आवश्यकता पड़ी, जिनका रोग बहुत बड़ा हुआ था।

आँखें मँदकर एकांत में गाना प्रारंभ कीजिए। जब आपका समस्त ध्यान अपने स्वर पर केंद्रित हो जाए तो गाना बंद कर दीजिए और कल्पना कीजिए कि आप अब भी अपना स्वर सुन रहे हैं, आपका गायन उसी प्रकार जारी है। मधुर से मधुर स्वर जो आपने सुना हो, उसकी कल्पना कीजिए और उसे अपना ही स्वर मानिए।

फिर यकायक कल्पना के गीत को स्वर में उठा लाइए और गाने लगीए। गाते-गाते फिर चुप होकर कल्पना में अपनी आवाज (जैसा आप उसे बनाना चाहते हैं) सुनिए।

नित्यप्रति कम से कम १५, २० मिनट तक इस अभ्यास को कीजिए और अपने को विश्वास दिलाते रहिए कि आपकी आवाज मधुर होती जा रही है। इस प्रकार निश्चीत रूप से एक दिन आपकी कल्पना का स्वर सचमुच आपका स्वर हो जाएगा अपवने में आत्मविश्वास पैदा करीए और निरंतर आपने से कहते रहिए कि आप भी अपने स्वर में जादु पैदा कर सकते हैं, आपका स्वर भी चमत्कार पैदा कर सकता है।



## N- LIST BOON FOR THE COLLEGE IN ACCESSING E-RESOURCES ONLINE

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### ABSTRACT

With the cutting down of the cost in the production of information online, various initiatives have been undertaken. Library consortia have emerged as the most powerful media for accessing information online in university environment, where computer infrastructure is very high. But Library consortia may not be feasible for the colleges, where a low number of e-resources is required and computer infrastructure is comparatively poor. Hence, a new initiative N- List is started to give online access to them. This paper provides an overview on the N-List programme of the INFLIBNET.

Key words: E-resources, ICT, INFLIBNET's Initiatives and N-List.

### INTRODUCTION

Libraries which at one time were considered only as the storehouses of knowledge have got a new look in the Information Communication Technology era. Various in-house activities which were carried out manually in libraries with much of pain and strain are being carried out smoothly and effectively with the help of ICT (Dhiman, 2003). Now, information & communication technologies, particularly the World Wide Web and the Internet, have affected the scenario completely and have brought transformation in the library society.

It is estimated that there were 20 University and 500 Colleges at the time of independence. But up to Dec. 2009 this number rose amazingly, and now there are 504 Universities and university-level institutions – 243 State Universities, 53 State Private Universities, 40 Central Universities, 130 Deemed Universities, 33 institutions of national importance established under Acts of Parliament, 5 Institutions established under various State legislations. In addition, there are 25,951 Colleges including around 2,565 Women Colleges. Out of 25,951 Colleges, Colleges have been recognized under Section 2 (f) and 5,997 Colleges under Section 12(B) of the UGC Act, 1956 (Anonymous, 2009).

All the universities and colleges of higher education are expected to provide standard library services to clients- faculty members and the students. But as stated by Alam (2011) "for many people however, it is very difficult or impossible to access electronic information due to various reasons". "Thus, various steps need to be taken for accessing online information through the libraries.



CONCEPT OF FREEDOM IN RABINDRANATH TAGORE'S *THE POST OFFICE*



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ABSTRACT

Tagore is the most outstanding name in modern Bengali literature. He wrote primarily in Bengali, but had a mastery of English also. He was the one writer who first gained for modern India a place in the world literary scene. He is a poet, a novelist, a dramatist, a short story writer, an essayist, a critic and what not? No other concern occupied the mind of Rabindranath Tagore more than refining, emphasizing and developing the dimensions of the concept of Freedom in his writing, especially the plays.

Human and Spiritual Dimensions of Freedom

According to Rabindranath Tagore, "the very mind of Man has its immediate consciousness of will within him which is aware of its freedom and ever struggles for it". It is a desire which is innate in man which seeks its manifestation in a continuous expansion of its dimensions. The spirit of Life too seeks its own unconscious freedom but, for Tagore, freedom is more human and conscious effort made by Mind. Explaining more lucidly the peculiar relationship of Life and Mind he says that "when the child is detached from its mother's womb it finds its mother in a real relationship whose truth is in freedom." Freedom thus can be defined as a state of detachment in which Man realizes himself "in a wider deeper relationship with the universe." This detachment is twofold-physical and mental, that is, freedom from the bondage of physical necessities, "the limited area of his own physiology" and the "freedom of view and freedom of action." Tagore holds that this spirit of freedom "is there to help a creature who has been left unfinished by his designer", thus imposing a certain moral obligation towards creative progress. And then he passes

on into tracing metaphysical dimensions of freedom when he says that, "freedom in its process of creation gives rise to perpetual suggestions of something further than its obvious purpose" For freedom is for expressing the infinite," and that "through such freedom we come into touch with the Reality that is an end in itself and therefore is bliss." He further defined such a fulfillment as "our freedom in truth". But this freedom cannot be attained in isolation from Society. For in our human world "only a perfect arrangement of interdependence gives rise to freedom"

Tagore, thus explores, both the human and spiritual dimensions of freedom. Further, in his scheme of working out the theme of freedom in his plays he also spells out the causes that hinder or promote the realization of this freedom for man. According to him, the lack of contact with nature or the outside world of man, the pursuit of self, possessions, forms, rituals or knowledge and the pursuit of safety hinder the attainment of freedom. On the other hand simplicity, sympathy, love of Man and imagination promote it. Even death, he considers as a kind of freedom. He knows that this freedom is not the mere negation of



The king is God, the Creator of the world of man and the world of nature. These two worlds; are different expressions of the same God. Man can be happy only by living in close contact with nature. The Post Office with the postman is the agency through which God is sending invitations to man to come out of his confinement and breathe the invigorating balm of nature. The letters are the flashes, sounds and scents but only a few sensitive persons can get such letters. Amal is the representative of such sensitive persons. The King's Physician is the liberator, who opens the gate of prison - house and leads the captive into the limitless world of nature. Amal dies, but what is death to the world - wise people like Madhav, the Physician and the Headman is really release from the dark prison-house into a limitless life in 'the Star light'.

Rabindranth himself has given the following interpretation of 'The Post Office'.

Amal represents the man who has received the call of the open road- he seeks freedom from the comfortable enclosure to habits sanctioned by the prudent and from walls of rigid opinion built for him by the respectable.

The Post Office can be interpreted as conveying a spiritual message. Amal is the soul of man and the king stands for God. The name Amal, which means pure, stainless indicates the purity of the soul for it comes from the ultimate Reality, the Absolute. The Post Office dramatizes the struggle of the soul to free itself from the ties of the earth and become one with the Universal Soul or God. But how can the soul escape from the world and meet God? Rabindranth's answer in the play is: through nature and through the outer world of men and women. Nature is filled with the divine presence and it is the best way to derive divine inspiration. Nature is the best means of

spiritual progress. Life in nature elevates and purifies the soul. If we want to get God we must take shelter in the bosom of nature. Amal wants to see Panch-mura hills, the Shamli river, go into the dense forest and blossom into a Champa.

Not only the world of nature but also an intimate contact with the world of men is necessary for realizing God. For, as Rabindranath tells us in one poem of Gitajali (No.11) God is not to be found in the lonely dark corner of a temple with all doors shut; He is where the tiller is tilling the hard ground and where the path - maker is breaking stones. Amal wants to mix with the procession of life going along the road in front of his window dairyman hawking his curd, the watchman, the flower- girl, laborers going out in search of jobs, the boys at play. The all knowing God knows the longing of the earnest soul and liberates it from all earthly ties and receives it into His bosom. At last the closed gate is opened by the King's Physician, and that which is 'death' to the world of hoarded wealth and certified creeds brings him awakening in the world of spiritual freedom.

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## PHYSICO-CHEMICAL ANALYSIS OF RIVER MORNA (MAHARASHTRA)

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### ABSTRACT:

The present study was conducted for the time period of one year (April, 2013-March 2014) with an aim to find out the physico-chemical nature of water at different sites of River Morna in order to access the physical properties and chemical nature of its water and the impact of sites on their concentration. Three sites were selected for the study purpose and the samples were collected on monthly bases. The samples thus collected were processed for the detection of metals with their relative concentrations following the standard methods. It was observed that the concentration of these metals was varying with respect to the collection sites, so was the case with respect to its physical nature. Also it was observed that there was a difference in concentration of these elements at different sites when compared among them. The data of physico-chemical nature of water of river Morna obtained during the study have been mentioned in Table 1. Furthermore it was also observed that concentration of some of these elements was more than the permissible limits as recommended by WHO which could have a definite impact on life. Keeping the same in view the present study was taken into consideration in which an attempt was made to access the water quality of River Morna and it is believed that this study would be helpful in formulating control strategy in near future.

**KEYWORDS:** Concentration, Physico-chemical, River Morna, Water.

### INTRODUCTION:

Water is one of the most important components of life. Due to increasing human activities which are hazardous to the environment quality of water is decreasing continuously and is posing a great threat to all forms of life



including humans. Polluted water is the major cause for the spread of many epidemics and some serious diseases like cholera, tuberculosis, typhoid, diarrhea etc. Although several attempts have been made by a number of researchers (Lenat and Crawford, 1994; Biggs, 1995; Gergel *et al.*, 1999; Caraco *et al.*, 2003; Donohue *et al.*, 2006) to study various aspects of water quality and the factors responsible for its degradation in order to formulate a significant control strategy all over the world. The need of the hour is to take immediate steps to treat the water and minimize its negative impacts. The fast changing lifestyle of Maharashtra for last few decades including; the increasing rate of construction, development of small scale industrial units, increasing rate of transportation, human population, immense use of fertilizers and pesticides and use of some other harmful substance have bring a drastic change in the quality of water in almost all water bodies of Maharashtra including river Morna which has posed a great threat to life. Therefore it was need to take an initiative in to the same line in order to gain some kind of knowledge about the said problem. Keeping the same in view the present study was taken in which an attempt was made to access the water quality of River Morna.

#### **MATERIALS AND METHODS:**

The water samples from five sites of the River Morna were collected on monthly basis and were analyzed for detection of concentration of inorganic substances followed by standard methods (Apha, 1975; Golterman and Clyno, 1969). Temperature was recorded by using a mercury filled thermometer. The thermometer was shaded from the direct sun light while taking the readings. pH of the water was determined by electrometric method using a laboratory pH meter. All the readings were taken at 25°C. Conductivity was determined by electrometric method using a laboratory conductivity meter. The alkalinity was examined by using phenolphthalein indicator. Dissolved oxygen was determined by iodometric azide modification method. Chloride was estimated by argentometric titration method in the form of silver chloride, Nitrate and nitrite was estimated by using colorimeter in the form of diazonium salts which combines water 1-nephthene hydro chloride to form pinkish red azo dye. While free Carbon dioxide was estimated by titrimetric method.

#### **RESULTS:**

The results obtained during the present study show that the physico-chemical nature of water of the river Morna has been affected and the concentration of some of the constituents has crossed the permissible limit as recommended by WHO. At all the study sites minimum air temperature was recorded in the month of December 2014, with the lowest recorded temperature as 26.12°C at site A, while as the maximum in the month of May 2014, with the highest 35.42°C at site C. Overall the temperature was high in summer and low in winter on an average. There was a moderate increase in temperature while moving towards the site C of the river. The pH was found within the range of 7.50-7.92 with the highest



recorded at site B followed by C and A respectively, the pH was increasing while moving from site A to site C. Likewise the concentration of dissolved oxygen show a continuously decrease from site A to site C, the dissolved oxygen concentration was in between 6.25-7.75mg L<sup>-1</sup> with the minimum concentration at site C and the maximum at site A. However the situation was reverse in case of free carbon dioxide the concentration of free carbon dioxide was observed in between 0.2- 3.12mg/litter and was highest at site C followed by B and A respectively. The concentrations of pH and dissolved oxygen were slightly higher during winter as compare to summer while as the concentration of free carbon dioxide was higher in summer and low in winter. There was a positive correlation in between pH and dissolved oxygen while a negative correlation between pH and dissolved oxygen with free carbon dioxide. Likewise the conductivity was within the range of 289  $\mu\text{S cm}^{-1}$  at site A in the month of June to 425  $\mu\text{S cm}^{-1}$  at site C in the month of August, while site B recorded a conductivity of 358. The conductivity was found less than the permissible limits. Chloride in water is generally due to the salts of sodium, potassium and calcium in the present study the chloride content was in the range group of 5.32- 15.45mg/litre, being highest at site B in the month of April and lowest at site A in the month of January. The comparison of chloride content of present values with that of the WHO reveals that it is much lower than the permissible limits. It was also observed that the concentration of nitrates was more than the permissible limits. The value ranged between 320mg/litter at site B to 630mg/l at site C and it was 485 mg/l at site A. Similarly the concentration of nitrite was within the range of 59- 185mg/l with the highest concentration at site C (59 mg/l) followed by B (113mg/l) and A (185 mg/l) respectively. Furthermore it was also observed that the concentration of calcium was varying with respect to the sampling sites and was within the range of 32- 41 mg/l which is within the permissible limits. The average concentration was lowest at site A (39 mg/l) followed by B (32 mg/l) and C (41 mg/l) respectively.

#### DISCUSSION:

The results obtained during the study show that the geographical location and season have a direct impact on the various physico-chemical properties of river Morna. Air temperature at different study sites followed the general climatic regime of the valley with minimum in December and maximum in May. The reason for comparatively low temperature at site A could be due to the presence of more plants at this site which shades the site at their and makes it less visible to direct sun light. The alkaline nature of water could be attributed to the buffering properties of some inorganic substances (Kang *et. al.*, 2001). The increase conductivity could be due to the increased urban and agriculture land use drainage into the river (Gray, 2004). The various ions added to the water from catchment areas regulate the conductivity of the water (Golterman, 1975). The higher concentration of DO during winter could be due to the fact that cold water contains more oxygen as compared to warm water as the DO is inversely proportional



to the water temperature (Hynes, 1960) in addition photosynthesis could have some kind of effect on DO (Berg, 1943). The increasing trend of free carbon dioxide down the river could be due to the addition of some carbon rich substances as majority of carbon comes from organic matter such as ground water, rock leaching, and dead terrestrial plant material. The gradual increase in chloride concentration of the river could be due to the increase in urban land use and due to the addition of some industrial/factory discharge (Livingstone, 1963; Woods, 1965; Allan, 1996). The reason for higher concentration of nitrates than the permissible limits could be due to the excessive use of fertilizers, pesticides and addition of human excretory products. The downward increase in nitrite is in contest with many reports all over the world; Osborne and Willey, 1988; Field *et al.*, 1996; Herlihy *et al.*, 1998. This could be because of the less concentration of dissolved oxygen in lower parts of river which decreases the conversion of nitrate and nitrite. The reason for increasing trend of calcium down the river could be increased concentration of waste material especially the calcium rich substances like bones and milk products of slaughtered and killed animals

#### CONCLUSION:

From the present study it is clear that the water quality of River Morna has been degraded qualitatively and the concentration of some constituents has passed the permissible limits and this could pose a great threat to the all kinds of life directly or indirectly. Therefore steps must be taken to protect this divine gift of nature and the present study is a step towards the same.

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Table 1: Physico-chemical properties of Water at different sites of River Morna

Parameters	Sampling sites		
	A	B	C
Temperature (°C)	26.12	30.12	35.42
pH	7.50	7.92	7.74
Conductivity ( $\mu\text{s cm}^{-1}$ )	289	358	425
Alkanity (mg/l)	98	100	106
Free CO <sub>2</sub> (mg/l)	22	25	20
Chloride (mg/l)	10	12	11
Nitrates ( $\mu\text{g/l}$ )	825	1132	1204
Nitrites ( $\mu\text{g/l}$ )	185	113	59
Calcium (mg/l)	39	32	41





SYNTHESIS OF PYRAZOLE DERIVATIVES AND THEIR  
ANTIMICROBIAL ACTIVITIES

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ABSTRACT

1-aryl/H-3-methyl-5-(acidhydrazido-N')-pyrazoles (V) have been synthesized by the interaction of aroyl/acyl-(2-ketobutanoyl)-hydrazines (III) and aryl/H-hydrazines (IV). The structures of all new compounds were confirmed by using elemental and spectral analysis. All the compounds were screened for their antimicrobial activities.

**KEYWORDS:** pyrazole, acidhydrazido, antimicrobial activities.

INTRODUCTION

The term Pyrazole was given by Ludwig Knorr in 1883. In 1959, the first natural pyrazole, 1-pyrazolyl-alanine, was isolated from seeds of watermelons. Pyrazole is a five member heterocyclic ring which is a multipurpose compound for designing effective bioactive agents. This interesting group of compound has diverse biological activities such as herbicidal.<sup>[1]</sup> antitumor.<sup>[2]</sup> antibacterial.<sup>[3]</sup> antileukemic.<sup>[4]</sup> and anti-inflammatory.<sup>[5-6]</sup> properties. Pyrazole derivatives with agricultural activity have been patented and widely reported.<sup>[7-9]</sup> Some pyrazole derivatives are used in commercial products, such as tebufenpyrad.<sup>[10]</sup> Studies on pyrazole amides have focused on 1-sulfonyl.<sup>[11,12]</sup> aminoacyl.<sup>[13]</sup> 5-benzylamide.<sup>[10]</sup> and 4-amidopyrazoles.<sup>[14]</sup> Experiments on aryl pyrazole insecticide began in 1985.<sup>[15,16]</sup> and led to the successful development of Regent, a widely used insecticide.<sup>[17,19]</sup>

Pyrazoles play an important role among the wide variety of nitrogen heterocycles that have been used as agrochemicals and pharmacological<sup>[5]</sup> agents. It has been shown to be a part of commercially important dyestuffs.<sup>[20]</sup>



$\beta$ -amino- $\alpha$ ,  $\beta$ -unsaturated ketones and esters are important building blocks for construction of variety of heterocyclic compounds.<sup>[21-25]</sup> We are reporting the synthesis of pyrazoles with acid-hydrazio group as one easy route.

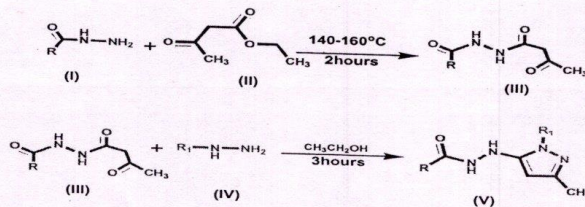
## EXPERIMENTAL SECTION

### MATERIALS AND METHOD

Melting points were recorded in open capillary in silicon oil bath and are uncorrected. IR spectra were recorded on a Shimadzu IR Spectrophotometer in KBr pellets. <sup>1</sup>H NMR spectra are recorded on a Bruker AM 400 instrument (400 MHz) using tetramethylsilane (TMS) as an internal reference and DMSO-*d*<sub>6</sub> / CDCl<sub>3</sub> as solvent. Chemical shifts are given in parts per million (ppm). Elemental (CHN) analysis of all compounds showed satisfactory elemental analyses. The necessary chemicals of AR grade used for the synthesis were obtained from Merck, S. D. Fine. The reaction are monitored by E. Merck TLC aluminum sheet silica gel<sub>60</sub>F<sub>254</sub> and visualizing the spot in UV Cabinet and iodine chamber. The antimicrobial screening of the synthesized compounds were carried out at microbiology laboratory.

### GENERAL PROCEDURE

Ethanolic suspension N'- acyl-(2-ketobutanoyl)-hydrazine and alkyl/aryl hydrazine in ethanol were mixed together. The reaction mixture was refluxed for 3 hours under waterbath. After completion of the reaction, solvent was distilled off get solid pyrazole. The compounds were crystallized with ethanol.



REACTION SCHEME

### Synthesis of N<sup>2</sup>-acetyl-(2-ketobutanoyl)-hydrazines (IIIa)

Acetic acid hydrazide (Ia) (0.01mole), acetoacetic ester (II) (0.01mole) were mixed together. The reaction mixture was heated at 140-160°C for 2 hours. The reaction mixture was cooled at room temperature, add crushed ice to give solid, filter and wash several times with water



and dry it. It was crystallized from ethanol, m. p. 200°C (Found C, 45.37; H, 6.22; N, 17.53%  $C_6H_{10}N_2O_3$ ; requires C, 45.56; H, 6.34; N, 17.72%).

Infrared Spectra:<sup>[26-27]</sup>

(Enolic-OH) 3330, (NH) 3200, (CH<sub>3</sub>CO) 1730, (NHCO) 1680, (C-N) 1300, (N-N) 1200.

<sup>1</sup>H-NMR Spectra:<sup>[28-29]</sup>

(CH<sub>3</sub> protons) δ 2.2ppm, (CH<sub>2</sub> protons) δ 2.5ppm, (NH protons) δ 5.3ppm, and (enolic OH) δ 5.7ppm.

#### Synthesis of N<sup>2</sup>-γ-picolinoyl-(2-ketobutanoyl)-hydrazines (IIIb):

isoniazid (Ib) (0.01mole), acetoacetic ester (II) (0.01mole) were mixed together. The reaction mixture refluxed over oil bath for 1 hour. The temperature of oil bath was maintained at 140-160°C. After one hour the solid was separated out. It was wash several times with water; dry a solid product, crystallized from ethanol m. p. 215°C (Found C, 54.38; H, 05.10; N, 19.11%  $C_{10}H_{11}N_3O_3$ ; requires C, 54.29; H, 05.01; N, 19.00%).

Infrared Spectra:

(Enolic-OH) 3431, (NH) 3295, (CH<sub>3</sub>CO) 1710, (NHCO) 1680, (C-N) 1320, (N-N) 1200.

<sup>1</sup>H-NMR Spectra:

(CH<sub>3</sub> protons) δ 2.4ppm, (-CH<sub>2</sub> protons) δ 2.6ppm, (NH protons) δ 4.6ppm, (enolic OH) δ 5.7ppm, (pyridyl protons) δ 7.8-8.7ppm.

#### Synthesis of 1-(2,4-dinitrophenyl)-3-methyl-5-(acetyl hydrazido-N')-pyrazole (Va)

To an ethanolic suspension of N<sup>2</sup>-acetyl-(2-ketobutanoyl)-hydrazine (IIIa) (0.01mole in 10ml) was added an ethanolic solution of 2,4-dinitrophenylhydrazine (0.01mole in 10ml). The reaction mixture refluxed on water bath for 3 hours. After completion of the reaction distilled off the solvent, solid was obtained. It was crystallized from ethanol (Found C, 44.82; H, 03.60; N, 26.08%  $C_{12}H_{12}N_6O_5$ ; requires C, 45.00; H, 03.75; N, 26.25 %).

Infrared Spectra:

(NH) 3322, (C= N) 1560, (C- N) 1333, (N- N) 1191, (NHCO) 1614, (NO<sub>2</sub>) 1509.

<sup>1</sup>H-NMR Spectra:

(CH<sub>3</sub> protons) δ 1.5ppm, (acetyl protons) δ 2.2ppm, (aromatic protons) δ 7.1 – 7.3ppm, (NH) δ 8.3 and 9.1ppm.



**Synthesis of 1H-3-methyl-5-(acetyl hydrazido-N')-pyrazole (Vc):**

(Found C, 46.69; H, 06.32; N, 36.17%  $C_6H_{10}N_4O$ ; requires C, 45.75; H, 06.49; N, 36.36 %).

Infrared Spectra:

(NH) 3300, (C=O) 1620, (C= N) 1550, (C- N) 1350, (N- N) 1210.

**Synthesis of 1-(2,4-dinitrophenyl)-3-methyl-5-( $\gamma$ -picolinoyl acetyl hydrazido-N')-pyrazole (Vd):**

(Found C, 49.90; H, 03.32; N, 25.38%  $C_{16}H_{14}N_7O_5$ ; requires C, 50.00; H, 03.64; N, 25.52%).

Infrared Spectra:

(NH) 3318, (C=O) 1655, (C=N) 1549, (NO<sub>2</sub>)1488, (C-N) 1332, (N-N) 1271.

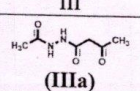
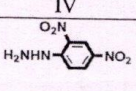

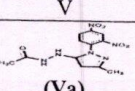
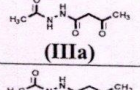
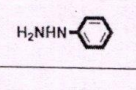

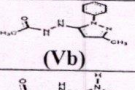
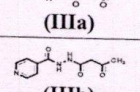
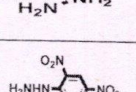
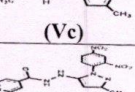
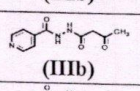
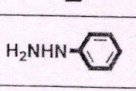

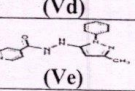
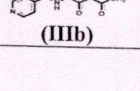
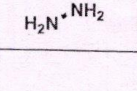

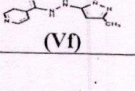
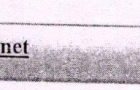
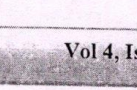
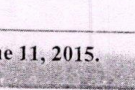
<sup>1</sup>H-NMR Spectra:

(CH<sub>3</sub> protons)  $\delta$  2.6ppm, (aromatic protons)  $\delta$  7.6 – 7.8ppm, (NH)  $\delta$  8.2 and 10.8ppm, (pyridyl protons)  $\delta$  8.7 – 9.9ppm.

**RESULTS AND DISCUSSION**

In this study we synthesized pyrazoles with the help of ideal procedure. With this procedure we get the good yield. All the compounds were characterized by IR, <sup>1</sup>H NMR and Elemental analysis. Physical data of the synthesized compounds are recorded in Table-1.

**Table-1: 1-aryl/H-3-methyl-5-(acidhydrazido-N')-pyrazoles (V)**

III	IV	V	Yield %	M. P. °C
 (IIIa)	 H <sub>2</sub> NHN-  -NO <sub>2</sub>	 (Va)	90	222
 (IIIa)	 H <sub>2</sub> NHN- 	 (Vb)	94	250d
 (IIIa)	 H <sub>2</sub> N-NH <sub>2</sub>	 (Vc)	95	180
 (IIIb)	 H <sub>2</sub> NHN-  -NO <sub>2</sub>	 (Vd)	92	210d
 (IIIb)	 H <sub>2</sub> NHN- 	 (Ve)	91	146
 (IIIb)	 H <sub>2</sub> N-NH <sub>2</sub>	 (Vf)	96	200

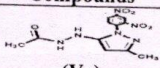
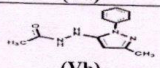
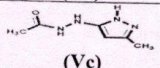
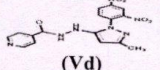
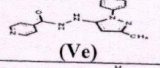
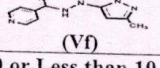


### ANTIMICROBIAL ACTIVITIES

The title compounds (Va-f) were screened for their antimicrobial activities against pathogenic bacteria. Organisms used include both gram-positive and gram-negative strains like *S. aureus*, *E. Coli*, *S. ableng*, *B. Subtilis*. The solvent used was DMSO. Sensitivity plates were seeded with a bacterial inoculum of  $1 \times 10^6$  CIU/mL in each well (diameter 10mm) was loaded with 0.1mL of test compound solution of variable concentration in DMSO. The zones of inhibition were recorded after incubation for 24 hours using vernier caliper.

The synthesized compounds (Va-Vf) were screened for their antibacterial activity using cup plate method. All compounds were screened for their antimicrobial activities against various microorganisms representing Gram-positive bacteria (*Staphylococcus aureus* and *Bacillus subtilis*), Gram-negative bacteria (*Escherichia coli* and *Salmonella abony*). Sensitivity plates were seeded with bacterial innoculum of  $1 \times 10^6$  CIU $\mu$ g mL<sup>-1</sup> and each well (diameter 10mm) was loaded with 0.1mL of test compound solution in DMSO, so that concentration of each compound was 100 $\mu$ g mL<sup>-1</sup>. The zones of inhibition were recorded after incubation for 24 hours at 37°C, using vernier caliper shown in Table-2. Inhibition zone record of the compounds clearly indicated that Vc, Vd and Vf were show intermediate activities against *B. Subtilis* and *S. ableng*. Compounds Vb, Vc, Ve, Vf are Sensitive against *S. aureus* and Va, Vd are not much more sensitive against *S. aureus*. All compounds are resistance against *E. coli*.

Table-2: Biological Activates of the synthesized compounds

Compounds	<i>S. aureus</i>	<i>E. Coli</i>	<i>S. ableng</i>	<i>B. Subtilis</i>
 (Va)	14(I)	10(R)	-	-
 (Vb)	21(I)	(R)	-	-
 (Vc)	17(S)	(R)	14(I)	14(I)
 (Vd)	12(I)	(R)	15(I)	15(I)
 (Ve)	21(S)	(R)	-	15(I)
 (Vf)	16(S)	(R)	13(I)	13(I)

Resistant= 10 or Less than 10,

Intermediate = 11-15

Sensitive = 16 or more



### CONCLUSION

This study reports the successful synthesis of the title compounds in good yields and shows measurable antimicrobial activities. The present method is efficient, mild, simple, convenient and applicable for variety of pyrazoles. These synthesized compounds have been characterized by spectral analysis. pyrazoles were found to be biologically active. The novel development offers the advantages including short reaction time, excellent yields, operational simplicity, less leaks and easy path.

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## BIODIVERSITY OF TREE PLANTS OF NARNALA WILDLIFE SANCTUARY, MAHARASHTRA

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### ABSTRACT:

Narnala is an ancient fort in the hills in the north of Akot Taluka at a point where a narrow tongue of Akola District runs a few miles in to the Melghat. This area is Southern part of Melghat Tiger Reserve. The area is well known for its richness of flora and fauna. The Sanctuary area has special historical, biological, mythological, archaeological, scenic and recreational values and is a point of attraction for the tourists and the people of Maharashtra. The plants are studied from Narnala Fort and the vicinity of the Fort. This area is rich in plant diversity. The sanctuary consists of a wide range of vegetation growing at different locations. A survey of the Narnala Wildlife Sanctuary was carried out during 2011- 2013. The present investigation deals with the taxonomic enumeration of tree plants recorded from Narnala sanctuary of Maharashtra. Altogether 59 species belonging to 29 families are reported from this region in the present study.

**KEY WORDS:** Biodiversity, Tree plants, Wildlife sanctuary.

### INTRODUCTION:

Tropical forests are regarded as one of the most species diversity rich terrestrial ecosystems. They are distinguished from all other terrestrial ecosystems by a very high diversity in many levels (species, life forms, etc). However, most of these forests are under immense anthropogenic disturbances and require careful management intervention to maintain overall biodiversity and sustainability (Kumar *et al*, 2006). Information with reference to species diversity and distribution pattern may help in evaluating the ecological significance of the study area. Trees occupy the important place in the vegetation. Trees have always been associated with wisdom and immortality in



India. Trees are important component of the natural forests because of their prevention of erosion and the provision of a weather-sheltered ecosystem in and under their foliage. They also play an important role in producing oxygen and reducing carbon dioxide in the atmosphere, as well as moderating ground temperatures. Timber from trees is a building material, as well as a primary energy source in many developing countries. Trees also play a role in many of the world's mythologies. Narnala Sanctuary is situated in Akot Tahsil of Akola district of the Maharashtra state. The total area of the Sanctuary is 12.00 sq.km. The study area lies between 23° 28' N latitude and 73° 18' E longitude. The area is traversed by river, which passes through mid part of whole taluka. Geologically, area is on the Satpuda mountain ranges.

#### MATERIAL AND METHODS:

The tree species were studied from the Sanctuary and from the vicinity of the Sanctuary. Numbers of the field trips were arranged in accordance with the different seasons throughout the whole year. The collected plants were brought to the laboratory, identified. The plant specimens were dried up with customary method and were mounted on herbarium sheets and labeled. The specimens were deposited in the Department of Botany, Shri Shivaji Arts, Commerce & Science College, Akot. In the enumeration, the collected plants were arranged family wise. The botanical name, family, local name were given in Table-1.

#### RESULTS AND DISCUSSION:

During present study recorded total 69 tree species and 29 families were collected and thoroughly observed (Table-1). Table-2 shows the dominating top five families with highest number of species.

**Table-1: Enumeration of tree species of Narnala Sanctuary.**

SR. NO.	BOTANICAL NAME	FAMILY	LOCAL NAME
1	<i>Annona squamosa</i> L.	Annonaceae	Sitaphal
2	<i>Miliusa tomentosa</i> (Roxb.) Sinclair.	Annonaceae	Umph
3	<i>Kydia calycina</i> Roxb.	Malvaceae	Homba
4	<i>Casearia graveolens</i> Dalz.	Flacourtiaceae	Bakhada
5	<i>Flacourtia indica</i> Comm.	Flacourtiaceae	Lodra
6	<i>Bombax ceiba</i> L.	Bombacaceae	Semal
7	<i>Eriolaena hookerina</i> Wight & Arn.	Sterculiaceae	Bother



8	<i>Sterculia urenus</i> Roxb.	Sterculiaceae	Kadao
9	<i>Grewia tiliefolia</i> Vahl	Tiliaceae	Dhamn
10	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Bel
11	<i>Chloroxylon swietenia</i> DC.	Rutaceae	East Indian Satinwood
12	<i>Ailanthus excelsa</i> Roxb.	Simaroubaceae	Maharukh
13	<i>Boswellia serrata</i> Roxb.	Burseraceae	Salai
14	<i>Azadirachta indica</i> A.Juss.	Meliaceae	Kadu nimb
15	<i>Soyimida febrifuga</i> (Roxb.) A.Juss.	Meliaceae	Rohan
16	<i>Cassine glauca</i> (Rottb.) O.Ktze	Celastraceae	Bhutikes1098
12	<i>Maytenus emarginata</i> (Willd.) D.Hou.	Celastraceae	Danti
13	<i>Schleichera oleosa</i> (Lour.) Oken	Sapindaceae	Kusum
14	<i>Buchnanania lanzen</i> Spreng.	Anacardiaceae	Charoli
15	<i>Lannea coromandelica</i> (Houtt.) Merrill.	Anacardiaceae	Moin
16	<i>Mangifera indica</i> L.	Anacardiaceae	Amba
17	<i>Semecarpus anacardium</i> L.f.	Anacardiaceae	Bibba
18	<i>Cassia fistula</i> L.	Fabaceae	Amaltas
19	<i>Butea monosperma</i> (Lam.) Taub.	Fabaceae	Palas
20	<i>Dalbergia latifolia</i> Roxb.	Fabaceae	Sisam
21	<i>Hardwickea binnata</i> Roxb.	Fabaceae	Anjan
22	<i>Bauhinia racemosa</i> Lamk.	Caesalpiniaceae	Kanchanar
23	<i>Bauhinia variegata</i> L.	Caesalpiniaceae	Apta
24	<i>Tamarindus indica</i> L.	Caesalpiniaceae	Chinch, Imli
25	<i>Acacia chundra</i> (Roxb. Ex. Rottl.) Willd.	Mimosaceae	Khair
26	<i>Acacia leucopholoea</i> (Roxb.) Willd.	Mimosaceae	Hiwar
27	<i>Acacia nilotica</i> (L.) Del.	Mimosaceae	Babul



54	<i>Holoptelia integrifolia</i> (Roxb.) Planch.	Ulmaceae	Palaspapadi
55	<i>Trema orientalis</i> (L.) Blume	Ulmaceae	Indian Charcoal tree
56	<i>Ficus bengalensis</i> L.	Moraceae	Vad
57	<i>Ficus racemosa</i> L.	Moraceae	Umbar
58	<i>Ficus religiosa</i> L.	Moraceae	Pimpal
59	<i>Phoenix sylvestris</i> (L.) Roxb.	Arecaceae	Tad

From the above observation, it can be concluded that Mimosaceae is the dominant and leading family, species wise as well as genera (06) wise, followed by Combretaceae (05), Rubiaceae (05), Anacardiaceae (04), and Fabaceae (04) in Narnala Sanctuary. Out of 27 families, total 11 families are monogeneric and monospecific.

Table 2.

Family name	Number of species
Mimosaceae	06
Combretaceae	05
Rubiaceae	05
Anacardiaceae	04
Fabaceae	04

During the present study, different areas of Narnala Sanctuary were visited thoroughly and frequently to record different wildy growing trees and cultivated. The deciduous teak forest is found in the forest areas of reserves. This region consists of mixed type of plant species with dominant teak forest is also found in Narnala range. Some of the important trees in the forest area observed during the survey are *Acacia nilotica* (L.) Del., *Bombax ceiba* L., *Flacourtia indica* Comm., *Lannea coromandelica* (Houtt.), *Prosopis cineraria* (L.) Druce., *Annona squamosa* L., *Ficus bengalensis* L., *Madhuca longifolia* J.F., *Mitragyna parvifolia* (Roxb.) Korth, *Boswellia serrata* Roxb., *Maytenus emarginata* (Willd.) D.Hou., *Diospyros melanoxylon* Roxb., *Tectona grandis* L., *Santalum album*, *Sterculia urens* Roxb., *Wrightia tomentosa* R. & S., *Gmelina arborea* Roxb. etc.



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## RESEARCH ARTICLE

### MEDICINAL PLANTS OF AKOT TAHSIL USED FOR THE TREATMENT OF KIDNEY DISORDERS

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#### ABSTRACT

The floristic studies on the flora of Akot tahsil of Akola districts, Maharashtra were conducted to assess the potentiality of the plant resources. The study reveals that about 31 plants belonging to 27 families are used in the treatment of kidney stone in local remedies. The information on the medicinal uses of plants is based on the extensive interviews from local healers and herbalists practicing traditional system of medicine. The details of the plant parts used, doses, mode of administration have been reported. *Pedilanthus tithymoides* and *Bryophyllum pinnatum*, *Tribullus terrestris*, and *Boerhaavia diffusa* are most effective and commonly used in the treatment of urinary tract diseases and kidney stones. Such plants may prove precious potential source of biologically active compounds for therapeutic use for the treatment of kidney ailments.

**Key Words:** Medicinal plants, Kidney disorders, Traditional uses, Maharashtra.

#### INTRODUCTION

Akot is a small town in Akola district in the Indian state of Maharashtra, India. Akot is located at 21.1°N 77.06°E. It has an average elevation of 345 metres (1131 feet). The area comprises Khatkali Forest, Ambabarwa core area, Dhargad Mahadev Temple. Narnala Fort is a historically famous Indian fort deep within the densely forested hills of the Melghat tiger reserve in the Satpura region. The Narnala fort & nearby area is rich in flora & fauna. The place has historic importance & attracts many people every year visiting for religious reasons, tourism & adventure sports. The forest area is also a part of Melghat Tiger Reserve. There is significant rainfall throughout the year in the area. Even the driest month still has a lot of rainfall. The average annual temperature is 27.2 °C and the average annual rainfall is 2330 mm.

In these modern times, most of people are affected by urinary tract infections and kidney stones due to unhealthy food habits. Indigenous systems like Ayurveda have lot of literature and prescriptions related to the stone problem (Mishra and Kumar, 2000). Many Unani remedies were also evaluated by the scientists for their efficacy. Large populations of India are currently facing with the problem of urolithiasis because of change in lifestyle and dietary habits.

A kidney stone is a hard mass of various substances that are naturally found in the urine become highly concentrated. Generally substances like calcium, oxalate and phosphorus when accumulated in high concentrations promote the formation of stones in the kidney, urinary tract or in bladder. Certain food materials may promote stone formation in people. There are four major types of kidney stone formations normally found in the body.

Calcium stones are the most common type found in two different forms which are calcium oxalate and calcium phosphate. Thus formed stones may remain in the kidney or pass down the urinary tract without even knowing. In majority of cases small stones may pass out on its own without causing pain but large stones get stuck along the urinary tract and can block the flow of urine, causing severe pain and colic. Several modern drugs and methods are available in the present system of medicine, but traditional medicine is also having good hold in curing the problems. People living in remote areas have excellent knowledge about medicinal plants and their utilization (Chauhan, *et al.*, 2009). To preserve this valuable information before it is lost forever, proper documentation is required.

#### MATERIALS AND METHODS

A survey was conducted as per prescribed standard methodology adopted for ethno botanical studies (Jain, 1991). Regular field trips were conducted in different seasons of the year. The plants were collected with the help of tribal and native people, traditional healers and other knowledgeable old persons. The information about plants used in treating kidney stones was documented along with vernacular names, plant parts used.

#### RESULTS

During the survey thirty one (31) plant species belonging to twenty three (27) families were documented as potential remedies in treatment, cure and prevention of kidney stones. Whole information is enumerated alphabetically with their botanical, vernacular name, family and plant parts used in Table I.

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19	<i>Dioscorea bulbifera</i> L.	M. Manakund H. Varahkand E. Potato Yam S. Varahi	Dioscoreaceae	Tubers
20	<i>Gmelina arborea</i> Roxb.	M. Shivan H. Gambhari E. White Teak S. Kasamari	Verbenaceae	Roots
21	<i>Hygrophila auriculata</i> (Sch.) Heine	M. Talimkhana H. Talamkhana E. Marsh barbel S. Vajrakantaka	Acanthaceae	Roots
22	<i>Mangifera indica</i> L.	M. Amba H. Aam E. Mango S. Amra	Anacardiaceae	Flowers
23	<i>Momordica dioica</i> Roxb. ex. Willd.	M. Kartoli H. Kikodi E. Spiny gourd S. Karkotaki	Cucurbitaceae	Roots, Fruits
24	<i>Mucuna pruriens</i> (L.) DC.	M. Khaj Kuir H. Kaunch E. Cowhage S. Kauncha	Papilionaceae	Roots, Seeds
25	<i>Ocimum sanctum</i> L.	M. Tulas H. Tulasi E. Holy basil S. Manjiri	Lamiaceae	Leaves juice+ Honey
26	<i>Phyllanthus amarus</i> Schum. & Thonn.	M. Bhui Awali H. Bhumi Amla E. Country Gooseberry S. Bhudhatri	Euphorbiaceae	Whole plant
27	<i>Sida cordifolia</i> L.	M. Chikana H. Bariara E. Country Mallow S. Bala	Malvaceae	Roots
28	<i>Solanum nigrum</i> L.	M. Makoi H. Makoi E. Black Night Shade S. Kakamaci	Solanceae	Fruits
29	<i>Tectona grandis</i> L.f	M. Sagwan H. Sagaun E. Teak S. Anila	Verbenaceae	Flowers
30	<i>Terminalia arjuna</i> (Roxb.) Wt. & Arn.	M. Arjun Sadada H. Arjun E. Arjuna S. Arjuna	Combretaceae	Stem Bark
31	<i>Tribullus terrestris</i> L.	M. Gokharu H. Gokharu E. Land Caltrops S. Gokshura	Zygophyllaceae	Roots, Fruits & Seeds

Abbreviation: M- Marathi name, H- Hindi name, E- English name, S- Sanskrit name

**Table 2. Total number of species of Dicot and monocot**

Class	Family	Genera	Species
Dicot	24	28	28
Monocot	03	03	03
Total	27	31	31

### Conclusion

The uses of traditional medicine have an everlasting in treating various complicated ailments. It is always a traditional and popular system of medicine among tribal people all over the world. Plants are an important source of herbal medicine. According to latest information more than 70 % of the world population depends on traditional remedies to cure various diseases. The present study area is previously explored by different ethnobotanists (Mishra and Kumar (2000), Chauhan *et al.* (2009), Lakshmi, (2014), Mustaque Ahmed & Singh. (2011). Vijigiri *et al.* (2013).), but less information is available about plants used for urolithiasis.

Present studies show a clear vision and knowledge of the natives about medicinal plants and their uses. Many modern medicines and treatments are available in the market for stone diseases but still rural and tribal people depend on plants as their personal remedies to treat themselves. Many of these plants are easily available in their vicinity and are cost effective. Hence many people even today have strong belief in herbal and crude drugs and use them as first option.

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sources of energy (electricity) are coal, oil, wood, peat, uranium.

-  Tidal power

energy:

for the building

States.

translates to 700 watts or the power

સાચી જાણ



desalination technique called pervaporation to remove the salt from sea water and make it drinkable. Specially made synthetic membranes are used to filter out large salt particles and impurities so they can be evaporated away, and then the rest is heated up, vaporized, and condensed back into clean water.

Crucially, the membranes can be made in any lab using cheap materials that are available locally, and the vaporization part of the process doesn't require any electricity. This means the new method is both inexpensive and suitable for areas without a regular power supply-both factors that are very important for developing countries.

The technique not only desalinates the seawater, it's capable of removing sewage and dirt from it too. The researchers combined expertise in oceanography, chemical engineering, agricultural engineering and biosystems engineering to come up with the solution, and their work has now been published in the journal Water Science and Technology.

"The technology implemented in the study is much better than reverse osmosis, the technology currently used in Egypt and most of the countries in the Middle East and North Africa," Helmy El-Zanfaly, a professor of water contamination at Egypt's National Research Centre, told Scidev.net. "It can effectively desalinate water with high concentration of salt like that of the Red Sea, where desalination costs more and yields less."

Unfortunately for those who are waiting for this type of technology, a lot of work is required before it can be put into action: the academics working on the project have to set up a pilot test that proves their theories correct on a large scale. There's also the issue of how to deal with the waste produced from the process.

What's certain is that a new procedure like this could have a huge impact on the lives of millions of people - according to Water.org, some 750 million people across the globe don't have access to clean drinking water, a problem that's responsible for around 840,000 deaths every year - more than the entire population of San Francisco.

#### Distillation by Evaporation

One of the easiest ways to convert salt water to drinking water is by using heat. You simply heat the water until it turns to steam, then capture the steam.

The water will evaporate but the salt and other impurities won't. The problem here is that it requires a ridiculous amount of energy in the form of heat to get the job done. Still, it's effective and if you combine the process with others, such as cooking or heating, you won't be wasting nearly so much fuel.

#### पण मानसिकतेची?.....

##### कारण

अनुभवी जपतोच अहोत आपण,  
 जुन्या रुढी, संकल्पना, जुन्या मर्यादा,  
 अनुभवी जळतच आहेत कुणाच्या बहिर्गणे

अणि शुभसत आहे कुणाच्या मनात  
 रुढीवाचिकृत्य सुडाची लडाची आग. '१४

अशी वास्तववादी जाणीव व्यक्त करणारी नव्यदोस्तरी कविता फार मोठ्या प्रमाणात येवू लागली आहे. शाहू-फुले-आंबेडकर यांच्या विचारांतून जगाच्या भ्रम निर्माण झालेली पिढी आपल्या जीवन जाणिवा आपल्या जगण्याने आपल्या अर्थव्यवस्थेत करू लागले हे आपल्याला सहज लक्षात येते.

आज शेती, शेतकरी, निसर्ग, पाऊस, पिक, कर्ज, ग्रामजीवन, यादंदनात जीवन जाणिव कवितेतून व्यक्त होवू लागल्या आहेत. ग्रामजीवनाचे बदलले संदर्भ याचाही नोंद नव्यदोस्तरी कविता घेत आहे. निसर्गाच्या लहरीपानगुळे शेतकऱ्याचे भावचित्रच कसे उद्भवत होते हे ही कवितेतून अभिव्यक्त होवू लागले. ही जाणीव कवी लक्ष्मण महाडिक आपल्या 'कुणाच्याही कविता' या

कवितसंग्रहात मांडताना म्हणतात.....

"सालमान साल नोरे  
 दुष्काळाचे आले नले  
 माझ्या गाव पाहिले  
 लोक परांगदा झाले.

कुणी विकतल्या जमिनी  
 कुणी कुलत्या दावणी,  
 कुणी बिचाड बांधून  
 केलेली उमाची तोडणी.

असं दुष्काळाचं इथं  
 साऱ्या गावाला झोबलं,  
 माझं पुण्यभूमी गाव  
 नापथळीला पोचलं. '१५

पाऊसाच्या लहरीपानगुळे शेतीची अन् पर्यायाने शेतकऱ्याची देवाच्या होते याचे नम्रिदीर्घ करणारे चित्र कवी लक्ष्मण महाडिक यांनी रेखाटले आहे. कवी लिहिलेला वाच आपल्या 'पाऊसाच्या' सा काव्यसंग्रहात पावसाच्या येण्याने, न येण्याने, जास्त येण्याने, कमी येण्याने शेतकऱ्यांच्या जीवनामध्ये





## GLOBALIZATION AND INDIAN WOMEN WITH SPECIAL REFERENCE TO ARUNDHATI ROY'S *THE GOD OF SMALL THINGS*

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### ABSTRACT

*Globalization is a growing phenomenon in the twenty first century that entangled the whole world within its clutches without showing any mercy. Globalization is primarily an economic process of integration that has social and cultural aspects. It involves goods and services, and the economic resources of capital, technology, and data. However the impact of globalization on Women especially Indian Women is noticeable. In fact the role of Women in the economic growth of entire globe is undeniable. In all walks of life, women have contributed as wholeheartedly as men. The present research article explores the Indian Women in the present context of globalization with special reference of Arundhati Roy's "The God of Small Things". It also illustrates how globalization has transformed the traditional Indian Society. The seeds of revolt are deeply rooted in Indian Society due to the spread of Globalization. In The God of Small Things, Arundhati Roy presents the Modern Woman. Ammu, the protagonist breaks the patriarchal power structure and revolts against it. The examples of how globalization is shown in Arundhati Roy's novel "The God of Small Things" (1997) are presented in this paper.*

**Key words:** Globalization, Modern Woman, Patriarchal Power Structure, Revolt

Globalization is a growing phenomenon in the twenty first century that entangled the whole world within its clutches without showing any mercy. The entry of Wikipedia defines Globalization as "the increasing interaction of people, states, or countries through the growth of the international flow of money, ideas, and culture." It further states that "Globalization is primarily an economic process of integration that has social and cultural aspects. It involves goods and services, and the economic resources of capital, technology, and data" (see the entry "Globalization" @Wikipedia)

It was Theodore Levitt, a marketing professor at the Harvard Business School, who apparently first employed the term in a 1983 article in the Harvard Business Review in which he defined it broadly as the process of integrating nations and peoples—politically, economically, and culturally—into a larger community. No doubt, Globalization promotes convergence, harmonization, efficiency, growth, and, perhaps, democratization and homogenization in the world. But it also has a dark side. Zeiler in his article in online





encyclopedia argues that globalization produces economic and social dislocations and arouses public concerns over job security; the distribution of economic gains; and the impact of volatility on families, communities, and nations. Many also worry about a growing concentration of economic power; harm to the environment; danger to public health and safety; the disintegration of indigenous cultures; and the loss of sovereignty, accountability, and transparency in government. (Zeiler: Screen)

Although initially Globalization commenced in the trade and business, it has influenced almost all walks of life. In today's world, everything has become the commodity; even literature does not remain unaffected. The post independence Indian literature encapsulates both negative and positive impact of Globalization. The writers like V. S. Naipaul, Salman Rushdie, Arundhati Roy, Shobha Day, Arvind Adiga, Kamala Das, Bharati Mukharjee, Jhumpa Lahiri, Rohinton Mistry, Kiran Desai, and many more displays the contemporary India in the background of globalization dealing with such issues as identity crisis, nostalgia, racial conflict, gender discrimination, cultural and economic hegemony, problems of Minority groups, Immigration, east-west encounters that arisen due to the effect of globalization. The role of Women in the economic growth of entire globe is undeniable. In all walks of life, women have contributed as wholeheartedly as men. However the impact of globalization on Women especially Indian Women is noticeable. The present research article explores the Indian Women in the present context of globalization with special reference of Arundhati Roy's "The God of Small Things".

The God of Small Things (1996) is the debut novel of Indian writer Arundhati Roy. It is a story about the childhood experiences of fraternal twins whose lives are destroyed by the "Love Laws" that lay down "who should be loved, and how. And how much." The book explores how the small things affect people's behavior and their lives. It won the Booker Prize in 1997. It is semi-autobiographical book which includes examples that draw the authors political beliefs and understanding of how India has been shaped and is still shaped by globalism. The story is set in Ayemenem, now part of Kottayam district in Kerala, India. The temporal setting shifts back and forth between 1969, when fraternal twins Rahel and Esthappen are seven years old, and 1993, when the twins are reunited at the age of 31. Facets of Kerala life captured by the novel are Communism, the caste system, and the Keralite Syrian Christian way of life.

Kerala, on the one hand is the most developed states so far as education, business, trade, health sector are concerned but on the other hand, there are many castes and sub castes in Kerala that are still sociologically orthodox. In the Globalization, people are witnessing the change in their day to day lives. No doubt, globalization has brought the people under one umbrella but it has also caused Class relations and cultural tensions. Roy evaluates the Indian post-colonial complex, or the cultural attitudes of many Indians toward their former British rulers. After Ammu calls her father a '[shit] - wiper' in Hindi for his blind devotion to the British, Chacko explains to the twins that they come from a family of Anglophiles, or lovers of British culture, 'trapped outside their own history and unable to retrace their steps'. He goes on to say that they despise themselves because of this. Chacko's relationship with Margaret, Pappachi's relationship with his family member and finally Baby Kochamma's relationship with Father Mulligan, and Ammu's relationship with Velutha are the examples of Class relations and cultural tensions. Globalization throws the global citizens into the





dilemma; the dilemma of identity crisis. The current generation is in constant search of their identity. There is always a quest of 'self'. Ammu and Velutha are emotionally and psychically perturbed. Both are relentlessly and maniacally driven by undefined hunger and feverish lust. The hunger and lust bring about their own fall. Incapable of silent submission and ungrudging suffering, they somehow pull the load of life. Roy's novel is a blending and binding of both exterior landscape and interior vision. Her protagonists suffer from lack of parental love, disturbed infancy, broken homes. They are disgruntled with their existence and often opt out of the mainstream of life. Alienation in her characters often manifests in immoral ties and activities.

Although there are negative influences of Globalization on Women, it has also highlighted some core issues related to gender equality. Due to globalization, the entire world came to know about the human rights and the situation of women. Due to globalization, Women got prepared to fight against the injustice happened to them throughout the centuries. They rebelled and accomplished their goal. In *The God of Small Things*, Roy describe the social changes that took place in India in the time of the Independence. The changes in the caste-system, the political changes and the growing significance of the communist party in Kerala are just a few examples of such changes. These changes have influenced modern India. Very few of them had any impact on women. The position the women have in society remains quite unchanged. Estha's account of Ammu's birthday can be considered as an illustration of the changes in perception of male and female position. In his notebook, he tells us about the gifts he and Rahel received from Ammu: "Then in the morning we had new cloths from Ammu as a back-present Rahel was a maharani and I was Little Nehru". (158)

The novel mainly portrays the struggle of female autonomy in the context of a life in a Syrian Christian family in Central Travancore. Ammu tries to crush the male-domination in her own way through sexuality. She brawls against the role model state of mind. She also fights against the cultural identity of the archetype of women of the traditional Syrian Christian families. The novel problematizes the oppressive machinery based on caste-discrimination and collusion with it of certain political forces. As a research scholar, C.P. Shafeeq rightly states:

*Through the novel, Roy depicts the social disillusionment of the lower caste people in the South Indian State, Kerala. Despite being legitimate members of a secular democracy built upon the values of freedom, equality, and justice, the plight of the 'untouchables' remain the same in a hostile post-colonial society. (2014: 33)*

To conclude, it is evident that the novel *The God of Small Things* is an explicit representation of social protest and implicit engagement with India's socio-political history and the impact of globalization can be noticed in the character of Ammu, Rahel, Baby Kochchamma and Mamachi. All these women characters exhibit the conditions of women in globalized India. Ammu is a representative of revolution who defies the norms of society and loves Velutha, a lower caste. Thus, globalization has provided the platform to Indian novelists to present New Indian women. Arundhati Roy has been succeeded in her task of showing the New Indian Woman in her novel.





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# A SWING FROM DALIT TO AMBEDKARITE LITERATURE: MULK RAJ ANAND AS PAINTER OF SOCIAL PANIC

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## Abstract

Indian social structure is the key source to Dalit literature. The flow of social reform has started from the emergence of Buddhism which teaches the notion of Altruism and Acculturation. The stream of conscious percolated through different ages under the humanitarian efforts of various social thinkers, ideologists and intellectuals. Literature as an art form highly utilized to pen down the social pain. Marathi is the background to Dalit notion. The challenging efforts of Dr Ambedkar pour the ray of self respect and a sense of social security among the Dalits. Traditionally dalits are those lied on the footstep of four fold Varna system. It is transformed with its new dimension as those deprived by socio-political, economic, religious, cultural and educational human rights. The various generations of social reformer and worshipper of words are depicting the miserable plight of the depressed on realistic observation. The magic of Dr. Ambedkar's thinking took a drastic change in the mindset of oppressed. They discarded the very notion of Dalit as connotation of 'hatred' and called themselves as Ambedkarite, as follower of Dr. Ambedkar, pioneer of progressive principles. All this turmoil happened in the both pre and post independent Indian era. Mulk Raj Anand as social painter pinpointed all the panic of Indian unequal ethos in his suited seminal creative English writing- *Untouchable*, *Coolie* and many more short stories. It is a saga of transition from toxin to tonic in the wake of self quest interwoven with the flight of fancy and factuality.

**Keyword** - Stream of consciousness, dalit literature, social panic, regional writer etc.

Dalit literature is a concept initiated from Maharashtra in India in 1958. The term Dalit of which literally meaning is 'broken' in Marathi. The term was first used by Jyotiba Phule and later popularized by its leader Dr. B.R. Ambedkar. It reflects the situation of Dalits million in South Asia, which are systematically and institutionally clutches and deprived of their civil, political, economic, social and cultural rights in all spheres of life. However, the Dalits are redefining the word and with it their identity - Dalits are the practical equality, believe in equality and the fight for equality!

It is a literary response to bring forth the value of humanism on natural justice rather than providing an aesthetic pleasure or the so called terms of literary world 'art for art's sake.' It is a revolt to the age old Indian puritan Varna system. Number of sources of the origin of Dalit literature can be cited from the Buddhist era down to the visionary Mahatma Phule and Shahu Maharaj. The pioneer work of Dr. B. R. Ambedkar is a milestone for social amelioration on the path of unequal Indian social stratification. Various visionaries, activists and ideological groups have contributed to this 'conscious movement' in different span. The spirit of Dalit movement is in struggle against anti-caste movement to build a modern democratic and secular Indian identity. They fought against all unjust divisions of society. A huge mass of literature is created in the light of Dr. Ambedkar's teachings and visions.

Dr. Ambedkar as dauntless and dashing intellectual is a vital figure behind the force of Dalit literature. The architect of Indian constitution, a diplomat, a politician, an economist, an educationist, has got his education in an open and libre atmosphere in the Western soil. As an acute observer of global vicissitudes he studied the global voice against color unjust in Western world through Harlem Renaissance Movement. As an ardent critic of caste system he was of the strong view that caste is manmade mechanism for the preservation of power of a few prevailing upon the majority. He denied openly the Indian caste structure supported by the fanatics of Hinduism. His speeches and writings is a compendium of his ideology and philosophy based on rationalism and logicism sharpened with an acute edge of progressive thoughts supporting to healthy nationalism. 'Caste is the bané of Hindus' is his central line of thinking and writing. His was a renaissance spirit. And mind too. Imitating the footsteps of their messiah the miserable Indian masses have got prestigious positions in all spheres of life. Dalitism is the ideological habitat where various socio-cultural sensitivities and political-economic groups coexist. Opposition to Hindu traditions in general intellectual and oppressive caste hierarchy, in particular, is the central concern of the movement of Dalit literature.

Literature is to be said as the mirror of society. To spreads the voice of awareness and self quest in Indian Dalit literature has become the main weapon. To quote P. B. Shelley, the next generation English Romantic poet has very meticulously propounded the meaning of the poetry, as one of the important genres of literature... 'Our sweetest songs are those that tell of saddest thought.' The same line of thinking has been utilized in the context of Indian Dalit literature. The turning of



suppressed voices to the catching clarion call for upliftment is penned down in different regional languages. Marathi as the native language of Maharashtra is on the forefront of it. Because of the seed of 'awareness agitation' is sowed in the native land of Dr. Ambedkar, in Maharashtra. There are host of academicians and writers writing their own experiences in so called part of literature 'atmcharitra' to which later 'swakathan' is replaced with. A stream of consciousness started with number of literary men in Marathi language. The great poets like Narayan Surve, Namdeo Dhasal, Daya Pawar, Arun Kamble, Macqwan Josef, Limbale Saran Kumar, Arun Dangle, and many other poets wrote poetry weaving the Indian ethos and boiling passion against communalism and casteism in their writing. The hosts of artists, painters, sculptures, folk singer, and musician have contributed to diminish the bias in Indian social structure. The southern literature in both regional language and translation is a concrete voice strengthening to Dalit literature. The recent Tamil vigor, poet, writer, activist and translator, Meena Kandaswamy has kindled the flame of caste annihilation through her prolific writing. The perennial poet as well as comprehensive Marathi critic Dr. A. R. Ingle is picking the pain as well as full swing yearning for changes in social mindset. As a noted Marathi literary celebrity, Dr A. R. Ingle, in 'Yuddhapakshi' an anthology of poetry, has finely fanned the fire of emotional expression mixed with realistic neo- Buddhist notions filled with scientific and restless mind for the zeal of knowledge, befitting the deprived as civilized citizen of Globalised horizon. Dalit Literature is transformed into 'Ambedkari Literature' in 1993 after the name of its harbinger and main inspiration Dr. Ambedkar. The dalit were demographically segregated and sidelined in a society. Their writing did not depict the fancy of romanticizing the issues, but resisted it strongly observed in vicinity. The canvas of Dalit writing may not be filled with rainbow colors of imaginative eyesight but the native hue of reality is able to compel the world to sit and speculate on it.

Indian social structure is the key source to Dalit literature. The flow of social reform has started from the emergence of Buddhism which teaches the notion of Altruism and Acculturation. The stream of conscious percolated through different ages under the visionary and humanitarian efforts of various social thinkers, ideologists and intellectuals. Literature as an art form highly utilized to pen down the social pain. Marathi is the background to Dalit notion. The challenging efforts of Dr Ambedkar pour the ray of self respect and a sense of social security among the Dalits. Traditionally dalits are those lied on the footstep of four fold Varna system. It is transformed with its new dimension as those deprived by socio-political, economic, religious, cultural and educational human rights. The various generations of social reformer and worshipper of words are depicting the miserable plight of the depressed on realistic observation. The regional languages as Marathi, Tamil, Kannad, Punjabi, Telgu and many more have contributed majorly in crossing the national borders of infamous attribution of Dalits. The magic of Dr. Ambedkar's thinking took a drastic change in the mindset of oppressed. They discarded the very notion of Dalit as connotation of 'hatred' and called themselves as Ambedkarite, as follower of Dr. Ambedkar, their great leader and pioneer of progressive principles. All this turmoil happened in the both pre and post independent Indian era. Mulk Raj Anand as social painter pinpointed all the panic of Indian unequal ethos in his suited seminal creative English writing- Untouchable, Coolie and many more short stories. It is a saga of transition from toxin to tonic in the wake of self quest interwoven with the flight of fancy and factuality.

Mulk Raj Anand is an Indian English writer famous for his depiction of the lives of the poorer castes in traditional Indian society. Along with R.K. Narayanan and Raja Rao, Mulk Raj Anand is actively involved in narrating the realistic social situation existed in the pre and post independent India in the world of segregated one. Anand the pioneer of Indo-Anglican fiction has no excel in delineating the Indian based writer in English to gain an international readership. The fertility of his fine imagination is so powerful that his acute eyesight has left no literary area untouched. His literary career sparks from his family, originated by the rigidity of the caste system. His first prose essay was a response to the suicide of an aunt, who had been expelled by his family for sharing a meal with a Muslim. His first novel Untouchable was a frightening exposition of the day-to-day life of Indian untouchable caste. It is the story in the life of Bakha, a toilet-cleaner, who unintentionally felt the victim of a higher caste. Bakha searches for his better fortune in which he was born, indulging with a Christian missionary, listening to Mahatma Gandhi and a succeeding conversation by two educated Indians. Anand has left a moral message for the alternation of mind of the 'Manu' oriented Indian rigid lifestyle controlled by Varna system. So also a scientific solution also suggested by Anand that newly introduced technology of flush toilet may be utilized for eliminating the need for a caste of toilet cleaners. The popularity of the fiction crossed the geographical and cultural boundaries and widely acclaimed Anand's reputation as India's Charles Dickens.

Anand is a progressive writer who used novel as literary weapon of social amelioration and of crusade against the evils of the society. His sense of social sensibility and sympathy with the depressed and the underdog is commendable. The fictional story of Untouchable set in the outcaste's colony outside of an unnamed town during the British reign. The dirty nature of work of the hero in the novel treated as impure. The higher castes view them as impure and make them do all the menial labor. It indicates the idea of impurity is only suits to the higher castes desires. Bakha represents a part of the social history of



India. He is a victim of social suppression and superstition. He feels strongly against with human injustice set out to search himself. But the protest of the individual is ineffective against the strength of the false morality of the established society. Hence, Bakha is presented as a meager person who is unable to turn his anger into action. Here Bakha represents as a Dalit character. The dominating society pretends to civilize those people. But there is inner unwilling about the Dalit groups. The lack of education enhanced miserable and pathetic condition of them.

Dalits are a mixed population, consisting of numerous castes from all over the nation. Like the character of Bakha, only through the education Dalits can improve their life style or change their lives and capacity. Untouchable is regarded as a classic since it brings into sharp focus which has proved unbearable to Indian society in general, and Hindu society in particular, encircling several issues upsetting the condition of man not only in India but also in the world. The novel explores the possibilities of interpersonal relations between untouchables and high caste Hindus considered in existential terms. Bakha's dilemma would have been all the more meaningful if the growth in his awareness which is required to be plotted by the novel had been rendered more plainly through a probing of this psyche.

Coolie is a shocking saga of an unending pain, suffering and prolonged struggle with an airy aspiration of brief moments of relief and hope. Coolie is called as the odyssey of Munoo, an epic of modern caste clashes a hilly boy who by fate is made to leave his idyllic village. In search of livelihood and with dream of seeing a better world. But wherever he went remained hand to mouth. His hope for better India shatters away. The first contact with reality shatters the innocent aspiration of this orphan boy. He first employed to the bank clerk, left him spellbound with a bitter experience. Munoo falls the victim of an ignorant house wife and finally flees far in search of bread and butter. He next finds himself in a primitive pickle and jam factory hidden away among the reeking lanes and dark alleys of the feudal town. Here he is acquainted with a bankrupt and bogus practices resulted to come into the rank of the laborers from where he had sought to rise, but failed. At the ultimate he died of tuberculosis as 'rickshaw' puller coughing blood for various diseases rested in feeble body.

He is exposed to a new world of friends and foes, of cut-throat competition and treachery, of the vulgar manifestation of vice and depravity of the red light district and of the communal fires enkindled and fed up by the factory boss to break an awaiting strike. Finally Munoo is knocked down by the car of an Anglo- Indian woman who takes him to Shimla as her servant which was goaded his grief by pulling the rickshaw for the mistress. The cancer of class system often results in the segregation and subjugation of thousands of people into everlasting misery and ultimate extermination.

The novel coolie projects the perspectives of a class- ridden society based on disparity which proves to be a more intricate and deceitful world. In this world the underdog, the coolie in this case, though apparently free, is subject to more rigidity and deprivation unlike the sweeper who is assured of this 'place' in the society because of the indispensability of his work. Munoo in coolie wandering from place to place for seeking out a secure place for livelihood in society, in vain. The harassed underdogs, a helpless victim of oppressive forces and an exercise of a dreamy destiny are masterfully handled by Anand. He symbolizes the disinherited earthy experience whose tragic life indicates man's brutality to man. Anand is an accomplished literary artist reads the mind and soul of an individual and the environment in an exceptional way, leaving behind his indelible impression in the mind of readers. As a novelist and short story writer Anand is par excellent. His Barber's Trade Union and other story compilation catching the pulse of society, makes the readers enthralled with shocking realistic panorama of Indian cultural cult and its limitation in the way of being human. The picturesque painting of personal and public panic purely empowered him in Indo-Anglian literature.

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## A SWIRL IN CULTURAL CURIOSITY AND CLASHES IN THE NOVELS OF JHUMPA LAHIRI

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## RESEARCH PAPER IN ENGLISH

## ABSTRACT

*Jhumpa Lahiri is one of the famous Indian English geniuses in Diasporic Literature. There are very few Indian voices in Literature in English which has obtained the world readership; Jhumpa Lahiri's stand is on the forefront. Her quite acquisition with Indian cultural trends and Western cross culture is concretely cemented in charismatic characterization and suited setting of plot in her literary output. Her credit more especially lied in the genres i. e. novel and short story. Her literary laudability has crossed both cultural and geographical boundaries for the attribution and substantiality in enhancing the literary standard of Global Literature. As a prolific writer, Lahiri has masterfully handled the various facets of fact and fiction. Her novels The Namesake and The Lowland are set in both native and foreign land illustrating the helplessness of the Indian expatriates caught in the whirlpool of cultural curiosity and clashes with unaccustomed land.*

**Keywords:** Cultural encounter, anglophile, expatriation, mania etc.

## Introduction

The present paper will try to explore the various vicissitudes in the lives of characters portrayed in the fictional folks of Jhumpa Lahiri in 'The Namesake' and 'The Lowland,' the everlasting elements in the world of reality and illusion as an encounter with cross cultural clashes and the mental and spiritual cavity created in lives of Indian expatriate.

Jhumpa Lahiri's contribution to Indian English literature has no equal. She, as an Indian diasporic writer, has finely woven her own experience through the energetic embroidery of perennial characterization. She placed her pace on the literary horizon with her debut, dainty and decorated collection of short story 'The Interpreter of Maladies.' This won for her the World fame. 'An Accustomed Earth' made her more accustomed with strange trends in literature. In Lahiri's fictional fantasy 'The Namesake' had challenged to the legendary Shakespearean literary question...What's in a name? The recently renowned and most popular novel 'The Lowland' has won her bags of prizes and awards bewitching from bureaucrat to Barack Obama, delineated with an enliven energy. Her reputation as a novelist heighten the intensity of storytelling as she herself being an Indian expatriate, migrated to foreign land. Her acute eyesight had accurately caught the glimpses of million masses migrated to abroad with the hope for bright future but crapped in the storm of cultural vacuum, ultimately rested and honored in their native culture, but in vain. Jhumpa Lahiri is an outstanding talent in depicting the vivid whims lingering in the minds of Indian immigrants to the Western World.

Jhumpa Lahiri paints the live experiences in her life in the debut novel 'The Namesake.' She had left an enduring imprint of literary creation in the minds of million masses, lovers and admirers. Along with many successful handling of her literary genres, her fictional writing has no challenge in catching the pulse of the readers. Her reputation reached widely in the all corners of the globe for her two famous and fantastic novels The Namesake and The Lowland. Being a Bengali family oriented, Lahiri had well known the Indian ethos and cultural trends with Indian nationals. Whereas her parents immigration to western countries for job made her accomplish experienced with western culture. Though she is nourished in American culture, her knowledge is immense with Bengali heritage from an early age for her parentage. The acquisition with four countries culture made her a citizen of multiculturalism.

In the novel The Namesake, Jhumpa Lahiri explores the conflicts of Indian immigrants for both the first and second generations. The novel focuses on the lives of Indians who have migrated to America and their digestion in a new country. The first generation immigrants try to follow the mannerism, values and beliefs of their own culture and any clash between their concept of 'home' and their beliefs baffle them. Most of the second generation immigrants have less emotional attachments in these matters.

The story, in this novel revolves around the four members of Ganguli Family, Ashoke, Ashima and their two children Gogol and Sonia. The novel opens with Ashima recalling her homeland fondly. Throughout the novel the central plot rounds around Gogol who is unfit for his bizarre pronunciation of name but when the story behind his baptized disclosed, Gogol embarrassed for his unwanted discomfort with the name. In the Namesake, Lahiri's experiences of growing up as

a child of immigrants resemble that of her protagonist, Gogol Ganguly. Immigration became blessing in disguise as that makes her a Diaspora writer. In the Namesake, she reflects on the Indian Diaspora and creates a narrative that reveals the inconsistency of the concept of identity and cultural difference in the space of Diaspora. What Jhumpa Lahiri probably means to explore through her work is the fact that the distinction between human cultures is man-made. Her characters, often Indian immigrants to America who must find the way between the cultural values of their homeland and their adopted home. Her abilities to convey the oldest cultural conflicts in the most immediate fashion and to achieve the voices of many different characters are among the unique qualities.

The expatriates are those who grow up in two worlds. They are culturally displaced for one or the other reason and therefore the question of identity remains a difficult matter. Jhumpa Lahiri believes that for immigrants, the challenge of deport, the isolation, the constant sense of estrangements, the knowledge of and longing for a lost world are more plain and upsetting than for their children. Culture suggests the arts, customs and institutions of a society, state or nation. It helps to decide certain people of a society, state or nation from other group of people of a society, state or nation. Certain elements constitute markers of identity of a particular culture like food, clothes, language, religion, music, dance, myths, legends, customs, individual community, rites of passage and others.

Through Namesake, Lahiri drives a clear message to people who are quite keen on dreaming of settling with strong aspirations for a better future on a foreign land without realizing that this dislodgment demands greater adaptability in terms of both climate and culture. The dilemma of name cannot be solved by the name on record. The identity of the individual, which is consistently affected by society, is something one has to discover through a process of reflections and compromises. The question of identity never affects when one is born on his motherland.

The Lowland is her Booker prize short listed novel which depicts Survival fraught for the humans. Two brothers, Subhash and Udayan, often walk across the lowland on their way to play football. Udayan and Subhash Mitra, who are opposites in nature one wild and exuberant and rebellious, the other responsible and contemplative and shy, take two very different paths, and the novel explores the consequences of their choices. After Udayan's untimely death, Subhash returns to India and marries his brother's pregnant widow, Gauri, but theirs is far from a smoothly functioning family. The ambitious, if uneven narrative traces the tensions between husband and wife, and between mother and daughter, as Gauri's parental instinct battles with her yearning for independence. Gauri will abandon her daughter, Bela, conceived with Udayan and brought up by Subhash as his own beloved child to pursue her own dreams of studying philosophy and building an academic career. Ms. Lahiri never manages to make this terrible act handled by Gauri with brutality and capricious highhandedness conceivable, explicable felt.

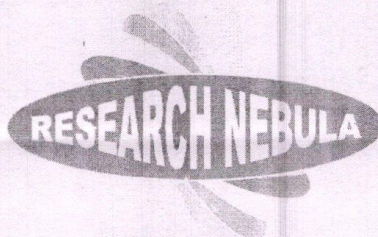
The most melting turns in the novel ultimately seizes the reader's imagination is Ms. Lahiri's deeply felt depiction of Subhash's relationship with Bela: his firm attachment to this good-hearted little girl; his perplexity as her grief over her mother's desertion leads her to withdraw from him as well; his slow, painful efforts to rebuild a life for



himself in the wake of Gauri's departure. She's been such a literary fixture that it's hard to remember that "The Lowland" is only her sophomore novel. Two brothers, the other problem is that Lahiri puts the undynamic Subhash and ice-cold wife Gauri center stage instead of their hothead shades revolutionary sibling Udayan and iconoclast offspring Bela. The uprootness from cultural ethics and craze for quick satisfaction in modern generation is projected in the fictions of Jhumpa Lahiri.

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समाज एवं संस्कृति संवर्धन हेतु भविष्य में भक्तीसंगीत का उत्तरदायित्व  
प्रा. संतोष एन. वावने  
(सहयोगी प्राध्यापक - संगीत) श्री शिवाजी महाविद्यालय अकोट

# RESEARCH PAPER IN SOCIOLOGY

<b>MANUSCRIPT INFO</b> Received: 23/08/2015 Reviewed: 26/08/2015 Accepted: 30/08/2015	<b>ABSTRACT</b> भक्तीसंगीत ऐसी कला है जो भक्त को भगवान से जोड़ दे। जिसका प्रमाण देते हुए भगवान विष्णु नारद से कहते हैं "न मैं वैकुण्ठ में हूँ, न योगी के हृदय में।" जहाँ गायन हो वही मेरा स्थान है। भक्ती संगीत का उद्देश्य केवल मोक्ष प्राप्ति तक ही सीमित नहीं है, अपितु समाज एवं संस्कृति संवर्धन हेतु भक्तीसंगीत की उपयोगिता सिद्ध हो रही है। और यही वर्तमान समाज की महत्वपूर्ण आवश्यकता है। स्पष्ट है की संगीत मनोरंजन के साथ ही भारतीय प्राचीन परंपरा - सम्यता, संस्कृति एवं सांस्कृतिक धरोहर का आईना है। और यही इस शोध पत्रिका का मुख्य विषय है। जिसमें प्राचीन कालीन संगीत सामवेद में विणीत संगीत विधी एवं विधाएँक जातिय - गान, शास्त्रसंगत नियम जैसे ग्रह, अंश, न्यास, तार, मंद्, उपन्यास, अल्पत्व, बहुत्व आदी लक्षण, शास्त्रीय संगीत का विकसीत रूप, परिवर्तन, रागो का चलन काल एवं स्वरूप, वर्तमान संगीत तथा समाजउन्नती की दृष्टी से संगीत तथा संगीत से जुड़े संगीत तज्ञो की भूमिका आदी महत्वपूर्ण तथ्योंपर विचारमंथन किया गया है।
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प्रस्तावना :-

भारत में भक्ति संगीत की परम्परा बहुत प्राचीन काल से चली आ रही है। वैदिक युग में यज्ञादी धार्मिक अनुष्ठानों के समय के विभिन्न देवी - देवताओं के लिए जो सस्वर मात्र गाए जाते थे, वे भक्ति संगीत का सबसे प्राचीन रूप है। ऋग्वेद के मंत्र ही जब सस्वर गाए गए, तब उन्हें सामवेद कहा गया। सामवेद संगीत मय और भक्तिमय है। पुराणों में प्राप्त अनेक स्तोत्र भक्ती संगीत के ही रूप हैं। स्तोत्रों को सस्वर गाने की विधी भी परम्परा प्राप्त है। भगवत्पाद शंकराचार्य द्वारा रचे हुए अनेक स्तोत्रों में पर्याप्त तत्व प्राप्त होते हैं, स्तोत्र व रामचरित मानस के स्तोत्र संगीतात्मक हैं। शिवमहीमन्स्तोत्र को सस्वर गायन करने की परम्परा आज भी अत्यन्त प्रचलित है। सामवेद के समान जाति - गान भी बहुत पवित्र माना जाता था। संगीत - रत्नाकर में जाती के सम्बन्ध में कहा गया है की, जातीयों ब्रह्म हत्या के पातक से भी मुक्ति दिलाने वाली हैं। जिस प्रकार ऋक्, यजु, साम में परीवर्तन नहीं किया जा सकता, उसी प्रकार साम से उद्भूत जातियों में भी परीवर्तन नहीं किया जा सकता। उक्त उद्धरण से प्रतीत होता है की जाती गान एक पवित्र गान था, जिसके द्वारा भगवत्सुति की जाती थी। जाती में प्रयुक्त पदों से भी पदी विविध होती है। यदयापी जाति के अपने कुछ नियम थे। ग्रह, अंश, न्यास, तार, मन्त्र, उपन्यास, अपपत्व, बहुत्व, षाडव और औडुवित ये दस लक्षण थे। दूसरे शब्दों में कहा जाए तो जाती - गान शास्त्रीय संगीत का विकसीत रूप था, जिसके आधार पर ही अनेक रागों का विकास हुआ। जाती में प्रयुक्त पदों को ब्रह्मप्रोक्त कहा गया है। ब्रह्मप्रोक्त का तात्पर्य है - ब्रह्म द्वारा कथीत व निर्मीत जिसमें भगवान शंकर की स्तुति की गई है।

ध्रुवपद के ही युग में अष्टछाप के अन्य कवि, गोस्वामी, तुलसीदासजी, मीराबाई, संत कबीर आदि अनेक भक्त कवियों और महात्माओं का अविभाव हुआ। इनके द्वारा भक्तीसंगीत की परम्परा को नवीन जीवन प्राप्त हुआ। संस्कृत साहित्य में अमिग्न जन - साधरण उन महान संन्तो के भक्तीसंगीत के द्वारा अपने प्रियतम परम प्रेमी परमात्मा की आराधना करके अपने जीवन को धन्य करते रहे। वैतन्य महाप्रभु विदयापती, चंडीदास आदि भक्त कवियों के गीत भी भक्तिसंगीत की शृंखला में आते हैं।

ख्याल गायकी के युग में सदारंग - अदारंग जैसे महान ख्याल रचयिताओं की अनेक रचनाएँ भक्ती - संगीत के अन्तर्गत आती हैं। निष्कर्ष यही है की ख्याल टप्पा, ठुमरी, कजरी, वैती आदि शास्त्रीय संगीत और लोक- संगीत सभी परम्पराओं में मदनमोहन श्यामसुंदर, भगवान भोलानाथ रघुनंदन राघव के प्रती की भावना व्यक्त करने वाली अनेक रचनाएँ आज भी प्राप्य हैं। प्राचीन काल से लेकर आज तक भक्ती - संगीत की अमृतमयी धारा लाखों - करोड़ों अतुल्य और त्रसित जनों को दिव्य जीवन प्रदान करती हुई चली आ रही है। यदी यह कहा जाए की संगीत का अविष्कार ही भक्ति - संगीत के रूप में हुआ, तो यह अतिशयोक्ती नहीं है। भारतीय साहित्य, कला, संगीत तथा नृत्य का सदा से यह वैशिष्ट्य और अन्तिम लक्ष्य रहा की कला की साधना तभी सार्थक

बनती है, जब उसके द्वारा प्रभु का सानिध्य प्राप्त हो, उनका अनुग्रह प्राप्त हो। इसलिए भक्त - कलाकारों के द्वारा जिन कलाकृतियों का निर्माण हुआ, उनकी समता लौकीक मनोरंजन के लिए निर्मीत की गई कलाकृतियों कभी नहीं कर पाई। इसका एक मात्र कारण यही है की भक्त जब अपना सब कुछ भगवत् चरणों में अर्पण कर देता है, तब उस स्थिति में अद्भुत रचनाएँ लोक - रिजौवलया निम्नस्तरीय तत्त्वों से एकदम असम्भूत रहती हैं। भक्ती संगीत ऐसे ही भक्तों का संगीत होता है, उसमें वे सारे तत्व हैं। जिनसे आत्मकल्याण के साथ - साथ लोकल्याण भी होता है। इसीलिए भक्ती संगीत को सदा उच्च स्थान प्राप्त हुआ और होता रहेगा। किसी भी देश, काल का वातावरण या समाज का बन्धन इस पर प्रतिबन्ध नहीं लगा सकता। गम्भीर सागर की तरह अनेक उपासना - पद्धती रुपी पवित्र नदीयों के जल को आत्मसात कर अपनी शांतीदायक लहरों से साधकों को सदा प्रेरित करता हुआ भक्ती - संगीत सदा भगवान के इन वाक्यों का स्मरण करता रहेगा।

नाहं वासमि वैकुण्ठ योगीना हृदये न च,  
मदभक्ता यत्र गायन्ति तत्र निष्कामि नारदः।  
मत्पराणकथाश्रुत्वा मदभक्तानां च गायनम्,  
निन्दन्ति ये नरामुदास्ते मुद्वेष्ट्या भवन्ति ही॥

भगवान विष्णु कहते हैं :-

"हे नारद, न तो मैं वैकुण्ठ में रहता हूँ और न योगियों के हृदय में। मेरे भक्त जहाँ गान करते हैं, वहीं मैं निवास करता हूँ। जो मुद मानव मेरी पुराणकथा और मेरे भक्तों का गान सुनकर निन्दा करते हैं, वे मेरे दोष के पात्र होते हैं।"

निष्कर्ष :-

शोधपत्रिका में निहीत मुख्य विषय को ध्यान में रखते हुए प्राप्त तथ्यों के आधार से निम्न निष्कर्ष सुझाव हेतु प्रस्तुत करते रहा।

- भक्ति संगीत शारीरिक एवं मानसिक संतुलन बनाए रखने में उपयुक्त सिद्ध हुआ है।
- प्राचीन से आधुनिक काल तक भक्ती एवं मोक्ष प्राप्ति का प्रभावशाली माध्यम संगीत ही माना जा रहा है।
- प्राचीन कालीन जाती गायन में प्रयुक्त सामान्य नियम ही वर्तमान शास्त्रीय संगीत का आधार है।
- संस्कार तथा रिती रिवाज का संस्करण तथा परीचालन भक्ती संगीत द्वारा होता रहा है।
- विश्व शांती बनाए रखने हेतु भक्ती संगीत ही एकमात्र उपयुक्त साधन है।

संदर्भ ग्रंथ :-

- भक्ती संगीत अंक - लक्ष्मीनारायण गर्ग
- संगीत विशारद - बसन्त
- संगीत मासिक - अ.भा.गौ. महा मंडल - मिरज.





## शास्त्रीय संगीत की वर्तमान स्थिति एवं भविष्य

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#### ABSTRACT

प्रस्तुत शोध पत्रिका का विषय ध्यान में रखते हुए प्राप्त महत्वपूर्ण तथ्य संक्षिप्त रूप में प्रस्तुत कर रहा हूँ। इस पत्रिका में शास्त्रीय संगीत के वर्तमान स्थिति को दर्शाने के साथ ही प्राचीन साहित्य पुराणों में वर्णीत संगीत का परिचय कराया है। साथ ही समयानुसार संगीत परंपरा में हुए बदलाव, स्थित्यंतर उन्नति तथा अवनति से जुड़े कुछ महत्वपूर्ण तथ्य, सटीक तथ्योपर आधारित निष्कर्ष तथा शोधपत्रिका के अंत में सुझाव निर्देशित किए हैं। आशा है यह शोधपत्रिका शास्त्रीय संगीत के उत्थान हेतु निश्चितही सकारात्मक सिद्ध होगी।

शोध हेतु :-

हमारी किसी भी गतिविधि का संचलन अर्थात् आरंभ से पूर्ण गंतव्य निश्चित करना अतिआवश्यक होता है। जिससे हमारे हर प्रयास की दिशा सुनिश्चित होकर समय और धन का अपव्यय न हो। यही सिद्धांत शोध प्रक्रिया को ( शोध पत्रिका ) पूर्ण रूप देने से पूर्व निम्न शोध हेतु ( ऑब्जेक्टिव्स ) निश्चित किए हैं।

- 1) विभिन्न विद्यालय तथा विश्वविद्यालयों में पढ़ाए जा रहे शास्त्रीय संगीत की वर्तमान स्थिति का अध्ययन.
- 2) संगीत से जुड़े विद्यार्थी तथा श्रोता की धारणाओं का अध्ययन.
- 3) शास्त्रीय संगीत का प्रचलन प्रभावशाली बनाने हेतु तथ्यों का अध्ययन एवं उपाय.
- 4) शिक्षक एवं विद्यार्थी दरम्यान आपसी तालमेल संपन्न बनाने हेतु अध्ययन एवं सुझाव.
- 5) युवा वर्ग को शास्त्रीय संगीत के प्रति आकर्षित करने हेतु सुझाव प्रस्तुत करना.

परिचय :- ( Introduction )

प्राचीन साहित्य एवं ग्रंथ पुराण इस बात का प्रमाण है की, संगीत कला को सभी कलाओं में सर्वोच्च स्थान दिया गया है, परन्तु वर्तमान में शास्त्रीय संगीत का स्थान बनाए रखना हमारे लिए एक चुनौती बन चुका है और यही वजह है की उस विषय में विभिन्न संगोष्ठियों का पहलुओं पर चर्चा हो तथा संगीत एवं मानव जीवन के उन्नत अवस्था को साकार रूप मिले। वास्तव में संगीत अपने आप में हर समस्या सुलझाने की क्षमता रखता है, परन्तु वर्तमान में हिन्दुस्तानी शास्त्रीय संगीत के अस्तित्व का विषय चिंता का विषय दिखाई दे रहा है। अतः हमें चाहिए की इस विषय में दिर्घ चर्चा हो और समस्याओं का समाधान ढूँढा जाए। इस संदर्भ में कुछ सटीक तथ्य निम्न प्रकार हैं -

विश्वविद्यालयों की उदासीनता

जैसे की हम जानते हैं विज्ञान एवं अन्य विषयों की तुलना में संगीत उपेक्षित रहा है, जैसे सरकारी अनुदान, भवन निर्माण, साहित्य आपूर्ति, शोध - साहित्य, पुस्तकालय, तालवादक आदि महत्वपूर्ण व्यवस्थाओं पर ध्यान नहीं है और इस उदाहरण से पुष्टी होती है की आज भी बहुतांश विश्वविद्यालय संगीत विषय से वंचित है।

यूरोपिय संस्कृति एवं प्रभाव

यह सत्य है कि हर देश का संगीत अपने आप में स्वतंत्र विशेषता रखता है अतः इनमें तुलना करने का कोई विशेष प्रमाण नहीं है और इसी उदारता को अपनाते हुए भारतीय संगीत में पश्चात्य संगीत का प्रवेश हुआ। यह अनुचित नहीं, परन्तु दुर्भाग्यवश हमारी आज की पीढ़ी अनुकरण की इस दौड़ में हिन्दुस्तानी शास्त्रीय संगीत की मौलिकता भूलता जा रहा है। जिसे उन्नत बनाने में इतिहास के हजारों उस्ताद एवं शास्त्रकारों ने अपना सम्पूर्ण जीवन संगीत कला के प्रति समर्पित किया। यह अत्यन्त चिन्तनीय विषय है।

वैचारिक मतभिन्नता

संगीत कला हमें वरदान स्वरूप प्राप्त है, परन्तु हम जानते हैं कि बहुतांश विद्वानों में आपसी तालमेल एवं उदार दृष्टिकोण के अभाव के कारण यह विचारधारा इस कला के विकास में शाप साबित हो रही है और यही वजह अन्तर्गत कलह का विषय बनी है, जिसकी वजह से शिक्षार्थी के दिल में संगीत के प्रति नकारात्मक भाव उत्पन्न होता दिखायी दे रहा है जो शिक्षक के लिए समस्या का कारण बना है। अतः हम इस विषय में ही समस्या का कारण है। यह वास्तविकता स्वीकारते हुए इस

विषय के विकास और कल्याण की दृष्टि से हमें अपने सिद्धांत निर्धारित करना आवश्यक ही नहीं, अपितु आद्य कार्य है।

४. अपर्याप्त समय

विश्वविद्यालयों द्वारा निर्धारित अल्प अवधि में अन्य विषयों के साथ - साथ संगीत विषय के अध्ययन का प्रावधान किया है, जिसमें अनेकों रोगों का चयन किया है। अतः विद्यार्थी के लिए संगीत की मूल आत्मा तक पहुँचने के लिए उपरोक्त शिक्षा प्रणाली पूर्णतः दोषपूर्ण है। अतः संगीत कला में महारत हासिल करने हेतु प्राथमिक शिक्षा से अंत तक अन्य विषय न देते हुए केवल संगीत विषय का ही प्रावधान होना चाहिए, ना की निर्धारित समय में रागों की पूर्ति।

५. सहयोग एवं संघटन

आज अगर हम अपनी समस्याओं को लेकर चिन्तित हैं तो इसकी वजह भी हम हैं। आपसी मतभेद और असंघटन की वजह से विषय से जुड़े हमारी समस्याओं पर सरकारी तथा गैरसरकारी संस्थाओं का पर्याप्त ध्यान नहीं है। अतः हमें अपनी समस्याएँ और अन्य कारणों का यही पुराणा केवल राग अलापने की बजाये चाहीये की, हम एक साथ मिलकर शास्त्रीय संगीत को अधिकाधिक उन्नत बनाने हेतु संघटीत प्रयास करें और हिन्दुस्थानी शास्त्रीय संगीत को दुनिया का आदर्श संगीत का सम्मान दिलाए इस आशा के साथ विराम ...

निष्कर्ष -

शोधपत्रिका का मुख्य विषय एवम् हेतु ध्यान में रखते हुए किये गये अध्ययन के पश्चात प्राप्त तथ्य निम्न रूप में प्रस्तुत है।

- विज्ञान कि तुलना में कला संकाय को निम्नतम स्थान दीये जाने के कारण शास्त्रीय संगीत प्रभावीत हुआ है।
- शास्त्रीय संगीत अवगत करने हेतु आवश्यक समय एवम् संयम के अभाव में शास्त्रीय संगीत प्रभावीत हुआ।
- कुछ नया (रिमीक्स) करनेकी चाह में शास्त्रीय संगीत के मूल तत्वों की हानी हो रही है।
- सरकारी शिक्षा विशेषज्ञ तथा कला संकाय से जुड़े संगीतज्ञों के बीच आपसी ताल - मेल के अभाव में शास्त्रीय संगीत को हानी पहुँच रही है।
- वर्तमान गरुशिष्य संबंध आपसी तालमेल से जादा आर्थिक लेन - देन के आधार पर निर्धारित होते हैं।

सुझाव -

वर्तमान शास्त्रीय संगीत की उन्नति तथा सही दिशा निर्देश करने हेतु निम्न सुझाव प्रस्तुत है।

- लुप्त हो रही गुरुकुल व्यवस्था को जिवीत रखने हेतु सरकारी तथा गैरसरकारी संघटनों द्वारा आर्थिक सहयोग लागू करना।
- विद्यालयों में पढ़ाये जानेवाली तासिका व्यवस्था का पुनः निर्धारन करते हुए, अधिक समय का निर्धारन हो।
- शिक्षक चयन पद्धतीका पुनःनिर्धारन करना। अर्थात् अकादमीक डिग्री न होतु हुए भी जो व्यक्ति अपने कला में निपुण है ऐसे गुरु द्वारा विद्यार्थीको शिक्षा देने का मौका दिया जाए।
- दूरदर्शन द्वारा शास्त्रीय संगीत का अधिका अधीक प्रसारन हो। साथ ही निजी चैनलों को सरकार द्वारा नियमित प्रसारन हेतु अनिवार्यता लागू करें।



प्रा. प्रतिभा चंद्रहास्य पवित्रकार संगीत विभाग प्रमुख श्री. शिवाजी कला, वाणिज्य व विज्ञान महाविद्यालय, आकोट

RESEARCH PAPER IN MUSIC

## ABSTRACT

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## KEYWORDS

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

संगीत पूर्ण पणे श्वास नियंत्रणावर आधारित आहे. प्राणायामाने

संगीत पूर्ण पणे श्वास नियंत्रणावर आधारित आहे. प्राणायामाने

श्यासावर नियंत्रण प्राप्त होते. मनुष्याच्या नैसर्गिक आवेग प्रणायामामने प्रभावशाली बनू शकतो. संगीत साधन करत वेळो वेळो अनपेक्षित प्राणायामाचा प्रयोग होतो. याच योग्य पद्धतीने त्रिशक्षण घेवून त्याच्या प्रयोगांना शास्त्रीय गायनामध्ये सुमाराग होण्याचे दाखून अनेक संगीत साधकही पुढे मिळतात. भारतीय संगीतामध्ये प्राचीन काळापासून योग आणि प्राणायामाच्या प्रयोग इ. तत्वांचा विस्तार होतो. वेद, ऋचा, मंत्र आणि प्रत्यक्ष गायनाद्वारेही मनुष्य आनंदाचा यात्र करतो. असायचो शांती होतो पुढे कुंभक, रेचक प्राणायामाच्या साध्यामार्तून पुढे होत असे. यातून संगीत दिग्ध श्रमन व त्यावर प्रभुत्व मिळविण्याकरिता काही वागसनाचा हो उपयोग होत असे. जसे परमासन, वज्रासन, पर्वतासन. परिवातन चक्रासन. स्वरितकामसन. सपायसन, वक्षपदमासन, अर्धवज्रासन इ.

नाद हा सर्गाचा प्राण आणि या प्राणाकरीता प्राणायामाची आवश्यकता आहे. याच दोन प्रकार आहे.

(१) आहत नाद २) अनाहत नाद. थापको संगीत उपयुक्त नाद म्हणजे आहत नाद. प्रणायामातील पाच प्रकारांचा संगीतामध्ये निष्कटचा संबंध आहे. हा संबंध गायन प्रस्तुत करत प्रेक्षी लक्षात येतो.

प्राणः - कंठापासुत हृदयापायंत,  
उपान - नाभिपासुत स्वातं पादाब्जं भगवत्पायंत,  
उदान - कंठप्राणसुत वर श्रोत्रपायंत,  
समान - हृदयापासुत स्वातं नाभोपायंत,  
व्यान - शरीरातीत श्वं गतिविधौ नियंत्रत क्रेरणं.

या यावत् प्रकरणेण गायनमभ्यर्थे समावेशः कर्तव्यः जायुं शक्नोति।  
 प्राज्ञोत्तरं श्रोतुंलाभः स्वयं साधनत्वात् विशेष महत्त्व आहं. मराठी  
 विश्वकोषे अनुसारं संगीत स्वर सोधनेनचर्चं प्राणायासमा मात्रा क्रम  
 क्रमानुसारं सिद्ध होतां. कारण प्राणायास भर्त्य एकदा ओंकार  
 मानेणाचारी वंछ अर्थानं माया हा क्रम १२,१६,१२ मात्राचा असतो.  
 स्वयंसाधन करताना ओंकारासाला शक्तिस्वर महात्त्व दिल्या जाते. आणि या  
 ओंकाराप्रमाणे पडज १॥ गाण्याचें अर्थानं आचारात्ता एक विशिष्ट वळण  
 येयुं स्वतःलागाव, स्वतःलादरी. तानचं प्रकार गळयानुतु दिल्या निघनात  
 आणि आवाजात सुधारणा दिखुन देते.  
**प्राणायासार्चं लाभ :-**

**प्राणायामाचे लाभ :-**











आपणव्याला पूर्ण उपोच्छून उडतांना दिसत माहीत, ते विलक्षणत, आपले समाजाचे जख्खाळ दुःख देख भवतात भुलून जाणत

‘बोला म्हणे माझा खदेह फिटला । देहीच भेटला देव आम्हा ॥’

[illegible]

कोण तो सोवळा — कोण खोवळा ।

कोणाशी विटल कशाचा जाहला ॥ असा विद्रोहाना  
कोणाशी विटल कशाचा जाहला ॥

[illegible]

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कवुल करून न नो अगुनही भयनीच्या मागील स्वयमंले दोखोवा दवडी  
पिटवाना म्हाणात को.

खटमट पावे शुद्ध होऊनि जाये.

दण्डी पिरी भावे, चोखामेळा ।।

[illegible]

‘यज दूर दूर हो मृणती । तूज भेटू कवणया सीती ?’

हा सोलोमनका प्रश्न संतमहर्षीतून कोणी यक्षानुभूतीने सोडवायला पुढे आले असते तर त्यांना दुःख किंवा पापरीकृत्यच विद्योपाये दर्शन प्यावे लागते वगैरे याचा अर्थ त्या काळचा आध्यात्मिक शेतातही समनता नव्हती पवित्र अशा आध्यात्मिक क्षेत्रातही काळेपण आत्मरुपता होती हे यावरून स्पष्ट होते.

प्रत्यक्ष जीवनात विधाव्या चोखोवाला मंगळवेद्यात वेडविगारिये काम करावे लागे ते कारणां ते गदीखाली चिरइन मेलें आणि पाय देण्याव्या पाय माली गाडण्यात आले, असे साधितत चोखोवाला पायरी



[illegible]



## AN INSIGHT IN TO CURRENT ECONOMIC DEVELOPMENT

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### Introduction:

In 2014-15 the Indian economy is poised to overcome the sub-5 percent growth of domestic product. The growth slowdown in the last two years was broad based, affecting in particular the industry sector. In addition to the growth slowdown, inflation continued to pose significant challenges. Although average whole sale price index (WPI) inflation declined in 2013-14 to 6.0% vis-à-vis 7.4% in 2012-13 it is still above comfort levels. The last two years were particularly disappointing for the manufacturing sector, with growth averaging 0.2% per annum. Over the next three to Five years we will have to reckon with subpar growth in most developed economies. Currency and commodity & oil prices fluctuations will become more pronounced. The dollar will cede some ground to the Yuan and the Euro.

### INDIA World's third largest economy

In a matter of 6 years, India emerged as the world's third largest economy in 2011 from being the 10<sup>th</sup> largest in 2005, moving ahead of Japan, while the US remained the largest economy closely followed by China.

The six largest middle- income economies-China,India,Russia,Brazil,Indonesia and Mexico account for 32.2percent of world GDP, where as the six largest high income economies – US, Japan, Germany, France, UK, Italy account for 32.9 percent report said.

The relative ranking of three Asian economies. China, Japan, Indonesia to US doubled while Brazil, Mexico and Russia increased by one-third or more," the report Said.  
IMF Cuts 2014 Global growth forecast

The International monetary fund lowered its outlook for global growth in 2014 as expansions weaken from china to US and military conflicts raise the risk of a surge in oil prices. The world economy will advance 3.4% in 2014, less than its 3.6% predication in April 2014 in 2015 growth will be 4% the IMF said in an update to its world economic

The IMF report reflected a world rattled by geopolitical risks that have raised since April 2014, including the potential for "Sharply higher oil prices" because of recent middle east unrest.

### Foreign direct investment.

NDA government has further relaxed the FDI norms. On July 24,2014the union cabinet liberalized foreign investments in insurance by hiking the FDI cap from 26 to 49 percent, a move that will cheer foreign investors and facilitate funds flow.

The cabinet also allowed 100% foreign participation in crucial infrastructure segments of the Railways in line with Narendra Modi government's plan to fast track modernization of the state run transporter. Now, foreign investors can invest in setting up of suburban rail networks, high-speed corridors, signaling projects, logistics hubs and in creating links to industrial parks.

### Agriculture and food management

Substantial strides in agricultural production have been made in the last few years. There was an increase of around 40 lakh in overall area coverage under food grains in 2013-2014 as compared 2012-13. A record food grains production of 264.4 million tonnes is estimated in 2013-14 as per the third advance estimated,



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१. "मुरलेन्दय : डॉ. कोलापल्लेची चिकित्सक प्रस्तावना"

प्रा. डॉ. शंकर राजत  
मराठी विभाग प्रमुख  
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नागनाथ कोलापल्ले यांनी विविध वाङ्मय प्रकारात लेखन करणाऱ्या साहित्यिकांच्या, समीक्षक, संशोधकांच्या आणि संपादकांच्या ग्रंथांना प्रस्तावना लिहिल्या. यातून कोलापल्ले यांच्या समीक्षक, संशोधक तदर्थ आणि सर्जनशील वृत्तीचा प्रत्यय येतो. तसेच कोलापल्ले या सामाजिक आणि चिंतनगर्भ अनुभवानी घामघून प्रकट होतो.

प्रस्तावने संक्षेपी वीर समीक्षक ए.के.लेले म्हणतात : "प्रथकारलेखन अन्य कोणा व्यक्तिने करून दिलेली ग्रंथाची ओळख म्हणजे प्रस्तावना. पुष्कळवेळा प्रस्तावनेचा उपयोग ग्रंथाची भलाबनी करून त्याची जाहिरात करण्यासाठी करून घेतलेला असतो. प्रस्तावनेत ग्रंथाची खुलीच अधिक असते" या लेखण्या विवेचनानुसार कोलापल्ले यांनी कोणत्याही ग्रंथाची भलाबनी किंवा जाहिरात करण्यासाठी अथवा ग्रंथाची व प्रथकाराची खुलीच करण्यासाठी आपल्या प्रस्तावना लिहिल्या नाहीत तर त्या कलाकृतीच्या अरणाचा वेध घेतल्या त्या त्या कलाकृतीच्या क्षेत्राचा बरोबरच त्या त्या कलाकृतीच्या मर्यादाही स्पष्ट केल्या.

"मुरलेन्दय" या महावीर जोषांच्या कथासंग्रहाच्या "दुसऱ्या आवृत्तीच्या निमित्ताने" नागनाथ कोलापल्ले यांनी पंधरा मुख्यांची चिकित्सक प्रस्तावना लिहून या कथासंग्रहाच्या वेगळेपणाची नोंद घेतली.

१९७० नंतर उदयाला आलेल्या पिढीतील महावीर जोषांचे हे एक महत्वाचे लेखक आहेत. बाल वाङ्मयाच्या निर्मितीबरोबरच त्यांनी कथा, कविता आणि ललित गद्यपर लेखनही केले आहे.

"मुरलेन्दय" मधील कथालेखन आपल्या वेगळेपणाने, प्रयोगशीलतेने उदून दिसणारे आहे. ही कथा रुढ मराठी कथेच्या सर्व संकीर्णापासून मुक्त आहे. तसेच 'भयानकांची' चौकट ती सर्वोच्च उभारून लावते. कथाव्यवस्थेच्या खुणाही अंगभर बाळगते. त्यामुळे ही कथा एकाच वेळी कथा आणि काव्य या दोन्हीचाही प्रत्यय देते. निवेदनही अतिशय सरळ, सहज आणि अक्षुब्ध आहे. एखादी आठवण सांगितो, एखादा अनुभव कथन करवा



[illegible]

साम्राज्य च दुःख अनेक ता कूट कोसलद्वय परदेसिया वैजयाजी शांत सोचत, महोदयकोसलद्वय कावरी शरीरय सख्खुन उल्लापना सोचयाही काय होत असे. क्वाचित् निरवस्थीय फडक्यान् उठक्यान् हालेली तहण सवेदनरस्य मरणांत या कायमनुप्राप्त होत, तर - पडक्यान् मरुत कोसलद्वय मरणांत परंपरायां असत होताना महोदयकाया एक प्राणाधिक कृपाशी दुःखांत मनोनेसना कायत होी.कोसलद्वय महाद्वयता, या दुःखापे किण कतही असताना जीवले पाशी लवंगी अतिशय संवेदित असल्याने जाणतसे. कोठेही ती आत्मदस्ता, भाविकीय होत नाही की जगण्या सख्खीय मरुतमृत्युवत् असत दुःखी होती. लवंग्यापे तावतं त्यांच्या पाळात असले असल्यापेक्षेकर शरीर जीवले तावतसे, सुखकतेने त्यांना प्रवृत्त कायत असे. तसेच 'आभाळ पाळनेच' मृत्यु कोसलद्वय जीवतातलें आण-प्राणाताना, श्वायु निर्यात होताना दुःखाना प्रत्यय येतो.'अनेक' आण-श्वेत देखे रे, प्रत्यय देत' या कावरीशी दुःखापे कावळ प्रत्यय येतो कोसलद्वय महाद्वयता, पंचवेला अचूकच असे स्वतः असो की, तावळ क्वाचित्मनोनेसने सोवेकरातलें प्रवृत्त करणुन असे त्याची शब्दव्यक्ती कावळय ह्म कायत करताना दिसते. असेच ते किनवरीतलें होतयाही दिसते. होतयापेक्षेकडे क्वाचित्पे क्वाचित्मनोनेसना, कावळमनोनेसना अतिशय प्रत्ययकराती वीतीने प्रवृत्त होत. याच मनोनेसनेतलें, कावळमनोनेसना प्रवृत्त होत असो. तसेच कावळमनोनेसना प्रवृत्त प्रथिमा-प्रथिके कोसलद्वय अमृतु ती कोसल अतिशय अचूकपणां आण सख्खुन चर्याता जातात आण त्यातुन काय कायसातीही होत असो. पण काही की कधी प्रथिमा पुनर्वसुत होउन आपले सामर्थ्य हरवत वसत नाही या अशी काय कोसलद्वयती येते.

‘मूल-इंद्र’ या महावीर जोधळे यांच्या कथांबी केलेली थिकित्सा, तिचे सामर्थ्य तिचे वेगळेपण आणि प्रयोगशीलता तसेच तिच्यामागून जाणवणाऱ्या उणीवा हे कोतापलेले यांचे आकलन जोधळेच्या भविष्यातील कथा प्रवासासाठी तसेच अशा तऱ्हेच्या कलाक्षेत्रात उपयुक्त व मार्गदर्शक, निश्चितच ठरू शकते. यात शंका नाही.

संदर्भ

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जोशी—लोकेंडे प्रकाशन, पुणे, प्र.आ. १९७३, पृ. २०.



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1. "तुकारामाचे निवडक ७५ अर्भग" : कोतापल्लेची चिकित्सक प्रस्तावना"

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डॉ. वासुदेव मुलागे यांनी संपादित केलेले 'तुकारामाचे निवडक ७५ अर्भग' हे पुस्तक कैलाश पब्लिकेशन्सने १९९५ मध्ये प्रकाशित केले असून, या पुस्तकाला डॉ. नागनाथ कोतापल्ले यांनी प्रस्तावना लिहिली. कोतापल्लेंनी संत तुकारामावर यापूर्वी अभ्यासपूर्ण लेखन केलेले होतेच. १९७८ साली 'माघ' या नियतकालीकातून 'तुकारामाची कविता' हा लेख प्रसिध्द झालेला होता. नंतर हाच लेख कोतापल्लेच्या 'पापुदे' या समीक्षा ग्रंथात प्रकाशित झाला आणि आता तोच लेख सुधारून या पुस्तकात प्रस्तावना रूपाने प्रकाशित झाला. 'पापुदे' या समीक्षा ग्रंथात तुकारामाची कविता संवाद बोधणीतून प्रकट होणारी असल्याचे लेखन करण्यात आले होते. मात्र आता १७ वर्षांनंतर तुकारामाच्या कवितेत बुद्धी जाण्याची संधी प्राप्त झाल्यामुळे तुकारामाच्या अर्भग वाङ्मयाचा चिकित्सक अभ्यास प्रस्तुत प्रस्तावनेसाठी करण्यात आला.

संत ज्ञानेश्वर, संत नामदेव आणि संत तुकाराम या तीन संत कवींनी मराठी समाजाचे भावजीवन घडविण्याचा प्रयत्न केला आहे. त्यातही तुकारामाची कविता ज्या काळात आकाराला आली तो काळ मराठी समाजाच्या स्थितीतील स्थिरतयच्या प्रारंभीचा काळ होता. म्हणूनच त्यांच्या कवितेत स्वतंत्र चिंतन आणि स्वतःच्या कवितेबद्दलचा आत्मविश्वास प्रकटला. 'ज्या कवीला स्वतःला नीटपणे व्यक्त करता येते, त्यालाच आपले समकालीन भावजीवनही प्रकट करता येते असे सांगून' तुकारामाची कविता एकाच वेळी या दोन्ही गोष्टी करते, या वेळी संतान्वर ती सहजपणे वावरते' अशी नोंद कोतापल्ले घेतात आणि समाजाच्या सांस्कृतिक जडणघडणीत त्यांच्या कवितेचा मोठा बाटा असतो याचीही सटीक नोंद करतात. संपूर्ण मध्ययुगीन मराठी कवितेचा ताल आणि तोल



तुकारामाच्या कवितेने सोलून धरलेला आहे. पुढेही आधुनिक काळातील अनेक कवींना तुकारामांची कविता अतिशय जबाबारी वाटलेली आहे. नव्हे, त्यांच्या कवितेच्या जडणघडणीत तुकारामांचा वाडा मोठा आहे.

एखाद्या कवितेला असे स्थान कधी प्राप्त होते? असा प्रश्न उपस्थित करून जेव्हा कवी आतले बाहेरचे असा आडपडदा न ठेवता सरळ स्वच्छ असे सगळे अतिशय प्रामाणिकपणे सांगून टाकतो तेव्हाच हे घडते. असे उतरही कोतापल्ले देतात आणि तुकाराम हे असे एक व्यक्तिमत्त्व आहे की जिथे आतले आणि बाहेरचे काहीच नाही. त्याचं सगळं जीवन म्हणजे एक सर्वांना सहजपणे सापता येईल असा पुस्तक आहे. पादरीकतेमुळे त्याची कविता एक काव्यात्म आत्मचरित्र होऊन जाते आणि भोवतीचा समाज त्यातून प्रकटू लागतो. त्यातूनच तुकारामांची समाज परिणामाराह विविध रूपे दिसतात. व्यक्तिगत तुकाराम चिंतनाची उंची प्राप्त झालेले तुकाराम, शोकावर कोरडे ओढणारे तुकाराम, परमेश्वर रूपाचे - नामाचे महात्म्य सांगणारे तुकाराम, परमेश्वर भेटीसाठी तळमळणारे तुकाराम, विपरित समाज स्थिती पाहून तळमळणारे तुकाराम कवित्वसारंखीचे चिंतन करणारे तुकाराम, तुकाराम आपल्या कवितेतून अशा विविध रूपात व्यक्त होत असे तरी हे एक अखंड आणि अभंग व्यक्तिमत्त्व आहे. याची कोतापल्ले अभ्यासकांना जाणीव करून देतात.

प्रस्ताननेच्या पहिल्या भागात तुकारामाचा वैयक्तिक आणि आध्यात्मिक अडणघडणीचा एक सूत्र आलेख कोतापल्ले अभंगासह रेखडतात, याच आलेखाच्या अनुषंगाने त्यांनी आवश्यक तिथे मीमांसाही केली. दुखात होरपळून निघालेले व्यक्तिमत्त्व आर्त, उत्कट होऊ शकते असे विधान केले तर ते तुकारामांच्या व्यक्तिमत्त्वाबाबत किती सार्थ आहे ते पटते. "संसारच्या विपरीत अनुभववातून तुकारामाच्या आयुष्यात दोन प्रक्रिया घडल्या. एक संसारवातून निवृत्तीची आणि दुसरी परमेश्वर शोधाची. कोतापल्ले म्हणतात, 'परमेश्वरचा शोध घेणे ही काही तरी सोपी गोष्ट नव्हती. अभ्यासाच्या मार्गातील अनेक धोके तर होतेच, पण भारतीय समाज व्यवस्थेने निर्माण करून ठेवलेला मोठा धोकाही होताच. हा मोठा धोका म्हणजे इवली श्रेष्ठ - कनिष्ठत्वावर आधारित असणारी जातिव्यवस्था तुकाराम कुणाची - खाणी. म्हणजे शुद्ध - शुद्धाला भक्ती करा करता

येईल? शुद्धाला उपदेश कसा करता येईल? शुद्धाला भेदीयत कसे जाणा येईल. शुद्धाला उच्च सर्गाच्या खांद्याला खांदी लावून कसे बसता येईल? हे सगळेच प्रश्न इतल्या व्यवस्थेने निर्माण केलेले. या व्यवस्थेमुळे त्याचा छळही खूप झाला. "परंपरादत्त', जन्मतः अडचणीवर तुकाराम आपल्या स्वतःच्या सामर्थ्याच्या साहाय्याने मात करतात. हाच तुकारामांमध्ये आणि बहुजन समाजातून आलेल्या इतर संत कवींमध्ये मोठा फरक आहे.

'कारकी संप्रदायाच्या उदयाबरोबर अनेक संत कवी उदयाला आले. विविध जातिजातीमधून उदयाला आले. परंतु इतका आत्मविश्वास आणि परंपरा उधळून देण्याचे सामर्थ्य कोणाही इतर संत कवींमध्ये नाही."

'तुकारामापूर्वी हजारो अभंग लिहिले गेले होते. त्यांच्या नंतरही शेकडो अभंग लिहिले गेले होते हे जसे आहे त्या प्रमाणेच शब्दानाला, पांडित्याला नकार देणारेही शेकडो अभंग त्यांच्या आधी आणि नंतर लिहिले गेले. तरीही तुकारामांच्या या अभंगांना वेगळेपण प्राप्त होते ते त्यांच्या व्यक्तिमत्त्वामुळे. तातून सुलखून निघालेले हे व्यक्तिमत्त्व कर्मातीचे संवेदनशील आहे. त्याबरोबरच स्वतःचा शोष घेण्याची, त्याच्या आभार, चिंतन करण्याची श्रेष्ठ प्रतीची बुद्धिमत्ताही या व्यक्तिमत्त्वाजणवळ आहे."

'पापाची तासना नको दावू द्या. त्याहुनि आंधळ बराच मी ॥१॥ या अभंगातून आपल्या मनात पापवासना येऊ नये असे ते सांगत असले तरी हा अभंग त्यांना का लिहावासा वाटला? याचे उत्तर देताना कोतापल्ले म्हणतात, 'भोवतीच्या जगातले सगळे व्यवहार याच वासनेने, निंदेने आणि इतर दुर्व्यवहारांने व्यापिलेले असण्याची शक्यता नाहीच असे नाही. म्हणूनच 'बुडती हे जन न देखवे डोळा' असे जेव्हा म्हणतात तेव्हा याचा केवळ आध्यात्मिक तेवढाच अर्थ घेण्याचे कारण नाही. लौकिक जगातल्या व्यवहारांसाठी हा निर्देश आहेच. "भक्तीच्या क्षेत्रात मात्सर तो कसला? असा प्रश्न उपस्थित करून शिष्य संप्रदाय उभा करून सर्वत्र मात्सरचीच पैरणी चालू होती. (आजही काही वेगळा अनुभव येत नाही.) 'आपले मत नोंदवताना कोतापल्ले असे वास्तवतेचे भान ठेवतात. 'अध्यात्माच्या क्षेत्रातील अपप्रवृत्ती तेवढ्या तुकाराम सांगतात असे नाही तर या निमित्ताने समाज स्थितीही प्रकट होतेच. 'अशीही नोंद कोतापल्ले देतात. कोतापल्ले सार्वत्रिक म्हणतात, 'एकनिष्ठ भक्तीचे आणि स्वतःच्या







# शोधनिबंध

## नामदेव दसाळांच्या कवितेतील वैद्व्या आणि विद्रोह

प्रा. डॉ. विलास तायडे  
मराठी विभाग,  
श्री शिवाजी कला, वाणिज्य व विज्ञान महाविद्यालय,  
आकोट. भ्रमणभाष-९४२१७९३२९६

नामदेव दसाळ हे १९६० नंतरच्या मराठी कवितेतील उत्तुंग प्रतिभेचे कवी आहेत. दलित कवितेतील-प्रामुख्याने दलित जीवनातील दुःखाचा काव्यात्मपूर्ण स्वर निनादतो आहे. त्यामध्ये प्रामुख्याने विद्रोह आहे. सर्वस्पर्शित्वाचे विद्रोही रूप कवितेला पहिल्यांदा कुणी दिले असेल तर ते नामदेव दसाळांनी! नामदेव दसाळांचे मूल्यमापन पारंपारिक पद्धतीने करणे चुकीचे आहे. त्यांनी आपल्या आयुष्यात स्वीकारलेल्या प्रखर राजकीय निष्ठा आणि त्यांची सामाजिक बांधिलकी, भाषिकवृत्ती यांच्यातल्या परस्पर संबंधाच्या नैतिक नात्याला सातत्याने अभ्येक्षित करणारा 'गोलपिठा' ते 'या सत्तेत जीव रमत नाही' हा काव्यप्रवास आधुनिक मराठी कवितेतला दुर्भिळ अपावदच म्हणावा लागेल.

मराठी साहित्याला नामदेव दसाळ हे नवखे लेखक होते. आपले अनुभव अस्सल बोलीभाषेत मांडणाऱ्या त्यांच्या कवितेने मराठीला एक तेजस्वी परिमाण दिले. दसाळांचे कवितेसंग्रह एकापाठोपाठ एक प्रकाशित झाले. त्या प्रकाशनामुळेच खऱ्या अर्थाने भारतीय संरचनेतील गुंतागुंतीच्या व्यामिश्र वास्तवातून प्रतिमीत होणारी भाषिक निर्मिती

किती सर्वंकष असू शकते याची जाणीव वाङ्मयीन पातळीवर होऊ लागली. गोलपिठा, मूर्ख म्हाताऱ्याने डॉगर हलवले, आमच्या इतिहासातील एक अपरिहार्य पात्र प्रियदर्शनी, तुही इयत्ता कधी तुही इयत्ता, खेळ, गांधू बगीचा, या सत्तेत जीव रमत नाही, मी मारले सूर्याच्या रथाचे सात घोडे, तुझे बोट धरून चाललो आहे, भयंकराच्या दरवाजात उभा आहे - अशी महत्त्वाची वळणे घेऊन आत्मपर्व्याच्या अत्यंत पारदर्शी वळणावर येऊन दसाळांची कविता उभी राहिली आहे. कवितेच्या संकल्पनेपासून तिच्या घटकत्वाचा परीघ विस्तारत नेणारी जी काही मोजकीच नावे आहेत, त्यांमध्ये दसाळांचे नाव निश्चितच पुढे आहे.

एकूण मराठी काव्यजगतात खळबळ उडवून देणारा अत्यंत सामर्थ्यवान, विद्रोही व बंडखोर कवी म्हणून नामदेव दसाळ यांचे नाव मान्यता पावले आहे. 'मानवी द्रोहाविरुद्ध अफाट' अशा विद्रोहाचा विस्तृत या संस्कृतीच्या सडलेल्या अंगावर बेडारपणे झोकणारा कवी विद्रोही दलित साहित्याची एक प्रभावी प्रारंभशक्ती ठरावा यात आश्चर्य नाही.

दसाळांच्या कवितेतील विद्रोह स्पष्ट आणि सरळ आहे. तो आडवळणे न घेणारा किंवा कुणाची भीडमुवत न देणारा आहे, तो निर्भय आहे. दसाळांना इथल्या मानवतावादी, भूतदयावादी, संशिसार्धबुद्धल प्रचंड चीड आहे. कारण दलित माणूस हा दयेवर जगणारा नाही. आचवर या मंडळींनी जो आव आणला त्याला उद्देशून ते 'त्यांची सनातन दया!' या कवितेत म्हणतात-

त्यांची सनातन दया फॉकलंड रोडच्या भडव्याहून उंच नाही  
खरेच त्यांनी आपल्यासाठी आभाळात मांडव घातला नाही  
माणूसपणाची किळस यावी इतके त्यांनी बनविले आहे लाचार  
करपून गेलेल्या आतड्यात साधी माती भरायला मिळत नाही  
(गोलपिठा, पृ.१९)

कवी सारखा पेटलेला आहे. त्याला त्याच्या खोपट्यातून पूर्ण सूर्य दिसतोय पण तो सूर्य काबीज करायला हवा, याची त्याला स्पष्ट जाण आहे. चार भितींच्या आड बसून क्रांतीचे गीत लिहिणारा तो कवी नाही. म्हणूनच तो त्वेषाने 'रक्तात पेटलेल्या अगणित सूर्यांनी!' या कवितेत म्हणतो-

किती दिवस सोसायची ही घोर नाकेबंदी?  
मरेपर्यंत राहायचे का असेच युद्धकैदी?  
ती पहा रे ती पहा, मातीची अस्मिता आभाळभर झालीय  
माझ्याही आत्म्याने शिंदाबादची गर्जना केलीय  
रक्तात पेटलेल्या अगणित सूर्यांनी  
आता या शहरा शहराला आग लावीत चला!

(गोलपिठा, पृ.३१)

'शहराला आग लावीत चला' असे सांगताना हा कवी कुणी माथेपिस्



नाही किंवा अराजकतावादी नाही. विद्वत्संसादन विधायकतेकडे जाणारा हा मार्ग आहे. नव्हे तसा तो प्रत्येक सच्च्या क्रांतिकारकाचा असतो. हे विद्रोही सूर त्याला कुणी दिले याचीही त्याला जाणीव आहे. आज जो हा आपल्या क्रांतिस्पर्धांचा रथ चालला आहे, त्याचे सारख्य कोण आणि कोणते तत्त्वज्ञान करते आहे, याचे त्याला भान आहे.

अस्पृश्य नवबौद्ध बनले, घटनेने दास्यमुक्त झाले, परंतु खेडोपाडी त्यांचे नशीब पालटले नाही. कविष्ठ वागणूक मिळत राहिली. शतकानुशतकांची जखम भळभळत राहिली. नामदेव दसाळ यांच्या कवितेचे या जखमेची अतूट नाते आहे. या देशात माणसे भुकेने आणि कष्टाने मरतात, गोरगरीबांच्या अन्नूने धिंडवडे निघतात, म्हणून कवी 'स्थायी दुष्काळातून' ह्या कवितेत लिहितात-

'अहिंसावादी शासन आहे हिंसेची देवता  
गावांची बनवली जातायूत मैदाने  
आयबहिणीच्या इंद्रियांचे तोडले जातायूत लचके'

(मूर्ख म्हाताऱ्याने डोंगर हलवले, पृ. ७)

धर्माच्या, संस्कृतीच्या नावाखाली कवीचा येथे अतोनात छळ झाला आहे. काळोखाचे सर्व गुहा भरलेल्या आहेत. मी फक्त माणूस म्हणून ते 'काळोख' या कवितेत लिहितात-

खरंच, माझा कुणीही परमेश्वर नाही  
खरंच, माझा कुठलाही धर्म नाही  
मी उभ्या उभ्या  
माझ्या नशिवाला लावले आहेत घोडे...  
या माणसासाठी  
या पाण्यासाठी

माझ्या किती एक पिढ्या बर्बाद... (गांडू बगीचा, पृ. १६)  
सर्वांगीण विश्वातील दुःखाचा बिचार करून ह्या वैश्विक दुःखाने कवीच्या हृदयात घर केले आहे. ते शब्दापलिकडले आहे. म्हणून ते 'गांडू बगीचा' ह्या कवितेत वेदना सांगताना म्हणतात-

माझ्यासारखा भणंग फाटका कवी  
अपभ्रंशाच्या संदलमध्ये नाचू लागतो  
ना घोषणा आहेत ना चीत्कार

(गांडू बगीचा, पृ. १८)

'फाल्गुन' ह्या कवितेत कवी म्हणतात की, संघर्षाला डगमगून न जाता ते स्वतः पेढून उठतात. विद्रोहाच्या विचाराने पेढून उठून परिस्थितीशी मुकाबला केला पाहिजे असे त्यांना वाटते. म्हणून कवी म्हणतात-

एका आवश्यक हिंसेसाठी उचल तुझा हात  
उगार स्वतःच्या आत्महत्येविरुद्ध बंड  
झुकलेली मान ताठ कर  
सूर्याच्या डोक्याला डोक्या भिडव  
तुझ्या पुरुषार्थावर चढलेलं गचपान वारून टाक

तुझ्या जिवंत रक्ताला पुन्हा एकदा हाकार  
तू वावर खुल्लम खुनी म्हणून (गांडू बगीचा, पृ. २१)  
'विभ्रम' या कवितेत कवी म्हणतात, कोणावरही विश्वास ठेवून उपयोग नाही. कुणीही या यातनातून 'मुक्त' करेल असे वाटत नाही.

सर्व माणसंच अशी मातीची होतात  
सर्व श्रद्धाच अशा कथलाच्या होतात  
आपलीच आपल्याला वाटू लागते भिती  
चंद्राची भाकर भुकेल्याला कशी रिझवेल  
प्रज्वलित झालेली वेदना कोण कसा विझवेल  
(गांडू बगीचा, पृ. ७४)

-अशी आपली दुखरी वेदना त्यांनी तीव्रतेने कवितेतून व्यक्त केली आहे.

'अनुभव' या कवितेत कवी पेढून उठलेले असून परिवर्तन करण्यास सिद्ध झालेले आहेत. उगीच प्रतिभावातासारखे कल्पनेच्या खोट्या भुलधारणा बळी न पडता ते वस्तुस्थितीतच जगणे पसंत करतात.

'आता खरंच सांगतो, चंद्राला भाकरीची उपमा द्यायला मला आवडत नाही  
मी मोजत नाही रात्रीच्या अंधारातले तारे  
निष्प्राण शवात ठिणया भरून मी उठवतो त्याला  
सकाळ झाली की माझाही दिवस बंडखोर होतो  
मी खिजगणतीत धरत नाही कल्पनेच्या सातव्या मजल्यावर  
राहाणाऱ्या प्रतिभावंतांना  
मी आयुष्याच्या अंगाने जमीन-अस्मानाचं अंतर मोजतो'

(या सत्तेत जीव रमत नाही, पृ. ७४)

जीवन जगताना कवीने प्रत्यक्षात नरकयातना भोगत जगावे लागते. आपल्याला सुखाने जीवन जगता येईल या भ्रामक कल्पनेवर कवीचा विश्वास नाही. म्हणून 'थोडा वेळ तरी' या कवितेत कवी म्हणतात-

'जिवंतपणीच नरक वाटायला आला  
मेल्यानंतरच्या सर्गाचं अप्रूप कशाळा?  
थोडा वेळ तरी उघड गडचा आकाशाची खिडकी'

(या सत्तेत जीव रमत नाही, पृ. ९०)

परमेश्वर ह्या संकल्पनेविषयी दसाळ आपल्या कवितेतून विद्रोह पुकारतात व 'चिंता' ह्या कवितेत म्हणतात-

या ईश्वरी नरकात मला अडकून पडायचं नाही  
प्रत्येक दिवस मला सोनियाचाच असतो  
अमृताचा घनु वर्षो न वर्षो  
या समाधीत मला कोंडून घ्यायचं नाही  
मी जरी अजूनही  
उशाच्या भाकरीची चिंता करतो आहे



(या सनेत जीव रमत नाही, पृ. ४२)  
परमेश्वराच्या भानगडीत अडकून न पडता मी माझ्या उद्याच्या भाकरीची चिंता करतो आहे, कारण कुणीही मदतीला येत नाही. सर्व स्वतःलाच करावे लागते. म्हणून धर्म किंवा परमेश्वर असल्या भ्रामक गोष्टीवर विश्वास न ठेवता मी माझे काम नियमितपणे करतो आहे. असा निमकेपणी हवाला देत ते काळोख या कवितेत लिहितात-

खरंच, माझा कुणीही परमेश्वर नाही

खरंच, माझा कुठलाही धर्म नाही

मी उभ्या उभ्या

माझ्या नशिवाला लावले आहेत घोडे... (गांडू बगीचा, पृ. १६)

धर्माच्या सगळ्या संकल्पना परंपरा जे लोक विनबोभाटपणे पार पाडत आहेत, आणि त्याच संस्कारात स्वतःही जगत असून मुलाबाळांनाही जगवत आहेत अशा लोकांना त्यांचा जन्म व्यर्थ गेला अशी निकराची भाषा वापरतात-

मी तुला शिव्या देतो, तुझ्या संस्कृतीला शिव्या देतो,

तुझ्या पाखंडीपणाला शिव्या देतो

.....बाबलींच्यानो इथं जन्म घेऊन तुम्ही बर्बाद झालात

आता मलाही जन्म देऊन बर्बाद केलेत (गोलपिठा, पृ. २८)

नामदेव ढसाळांची कविता दलितानंवर झालेल्या सामाजिक अन्यायाचा आरसा आहे. ज्या वर्णव्यवस्थेने, समाजव्यवस्थेने हे दुःख ओढवले त्या समाजव्यवस्थेच्या विरुद्ध ढसाळ विद्रोह पुकारतात 'बेबीचा देठ ओला होणाऱ्या बयात' या कवितेत ते लिहितात-

मी तुला शिव्या देतो, तुझ्या ग्रंथाला शिव्या देतो,

तुझ्या संस्कृतीला शिव्या देतो,

तुझ्या पाखंडीपणाला शिव्या देतो

मी हे सारं सारं बोलणार नव्हतो, पण माझे हात जागे झाले

हजारो वर्षे मी होतो खंगत

या गुहगुहांतल्या प्रचंड अंधारात

कालच तो गुहेच्या तोंडाशी ठेवून गेला पिसाळलेला जाळ

मी शिलगावीत जाणार आहे यापुढचा काळ

(गोलपिठा, पृ. २९)

बाबासाहेबांच्या विचारांनी जागृत झाल्यामुळे मी हे करण्यास प्रवृत्त झालो आहे. असेही ते सांगतात.

ढसाळांसारखे वीरनायकांच्या प्रतिमेत प्रकट होणारे दलित कवी केवळ नकाराशी गतार्थ झालेल्या समाज व्यवस्थेच्या विदध्वंसाशी धांवताना दिसत नाही; ते स्वप्नशील असतात. जुन्याची जागा घेणारे विधायक स्वरूपाचे असे काहीतरी स्वप्न पाहण्याची क्षमता असलेल्या त्यांच्या कविमनांना जाणवत असते म्हणून ते आत्ता कवितेत म्हणतात-

सूर्याकडे पाठ फिरवून त्यांनी शतकाचा प्रवास केला

आता अंधारायिक होण्याचे नाकारलेच पाहिजे

आता आभाळमुका घेणाऱ्या हवेल्यांना

सुरंग लावलाच पाहिजे

(गोलपिठा, पृ. ३०)

असे ते म्हणतात.

ढसाळांची ही बंडखोरी फक्त ऊबडवी नाही, तर सामाजिक अन्यायाविरुद्ध प्रस्थापितांचा सर्वनाश करू पाहणारी आहे. अशी प्रस्थापित व्यवस्था उद्ध्वस्त करणारी ढसाळांची कविता सामाजिक समता प्रस्थापित करू पाहत आहे व 'माणसांचे गाणे' गाण्यास उत्सुक आहे.

नंतर उरल्यासुरल्यांनी कुणालाही गुलाम करू नये लुटू नये काळामोरा म्हणू नये तू ब्राह्मण तू क्षत्रिय तू वैश्य तू शुद्र असे

हिनवू नये

एक तीळ सर्वांनी करडून खावा,

माणसावरच सूत रचावे माणसाचेच गाणे गावे माणसाने

(गोलपिठा, पृ. ४८)

अशी ढसाळांच्या कवितेतील सामाजिक जाणीव आहे.

नामदेव ढसाळांच्या कवितेमध्ये विद्रोहाचे जे अनेक पदर आहेत त्यांमध्ये पुराणकाळामध्ये असलेल्या इतिहासाची माहिती आली आहे. या माहितीचे तुकडे किंवा संदर्भ इतिहासाच्या त्या त्या घटनेची आठवण करून देतात. 'बेबीचा देठ ओला होणाऱ्या बयात' या कवितेत ते म्हणतात-

पाखंडी मनुला-माणसाच्या शत्रूला

तू डोक्यावर घेतलेस

गीतेचे गरळ प्रशून तू रोम रोम बांडगूळ केलेस

संस्कृतीच्या नावाखाली तू त्याला वेशीबाहेर काढलेस

बारा महिने तेरा काळ कडत ठेवलेस, रडत ठेवलेस, सडत ठेवलेस

हे वाद्या! तू माणसालाच असे हीन केलेस (गोलपिठा, पृ. २८)

संस्कृतीच्या नावाखाली मनुला आदर्श मानून माणसाचे किती हाल केले ह्याचे वर्णन ह्या कवितेत केले आहे.

पारंपरिक विचार जोपासल्यामुळे आपली, आपल्या देशाची प्रगती होऊ शकली नाही उलट आपला नैतिक न्हासच झाला- हे सांगताना 'डुःखाचा वाढदिवस' या कवितेत ते लिहितात-

पुराणमतवादी साम्राज्यशाही आणि फॅसिस्ट

प्रगती लोकशाही आणि स्वातंत्र्य

या जगाचा सतत झाला आहे

सांस्कृतिक नि नैतिक न्हास

वर्षांमागून गेलीयूत वर्षे बीजांना फुटले नाहीत अंकुर

भविष्याची अस्पष्टता जराही झाली नाही कमी

पेटली नाही कधीही न विझणारी ज्योत

(मूर्ख म्हातान्याने डोंगर हलवले, पृ. २३)



अशी खंत ते या कवितेत व्यक्त करतात. वेद, पुराणांवर टीका करताना खीला कशी हिणकसपणाची वागणूक दिली ह्याचे वर्णन करताना 'आमच्या इतिहासातील एक अपरिहार्य पात्र : प्रियदर्शनी' या दीर्घ कवितेत लिहितात-

वेदांनी खीला  
पाचवा वर्ण उल्लेखून  
भांडवलदारांनी खीला  
सेक्सहॉल संबोधून  
विडंबना केली आहे अतिपवित्र मानवजातीची

(प्रियदर्शनी, पृ. ३५)

मनूच्या वारसदारांनी संस्कृती जोपासण्याच्या नावाखाली खीला कशी वागणूक देऊन तिच्यावर अन्याय केले आहेत त्याबद्दलचे विचार ह्या कवितेत मांडले आहेत. म्हणून 'आंबेडकर : १९८७' या कवितेत दसाळ लिहितात-

त्यांच्या चुकीच्या भूमिकांविरुद्ध  
तू पहाडासारखा उभा राहिलास  
गुरूत्वाकर्षण हरवून बसलेल्या पृथ्वीच्या देहात पाय रोवून  
जी कठोर वचन पडली तुझ्या मुखातून बाहेर  
त्यांचा उद्देश होता माणसांच्या मुक्तीचा  
तुझा विद्रोह नव्हता अज्ञानी आंधळ्या  
तो होता स्वतःला बदलण्याचा जग बदलविण्याचा

(तुही इयत्ता कंची, पृ. १०३)

असे आंबेडकरांच्या विचारानुसार ते बोलतात.

पारंपरिक रुढिग्रस्त अशी ह्या संस्कृतीच्या खोल विचारांत परिवर्तन करायचे असेल तर समाजवाद, कम्युनिझम शिवाय पर्याय नाही असे ते सांगतात. 'आंबेडकर : १९८०' या कवितेत ते म्हणतात-

या जगातला समाजवाद  
या जगातला कम्युनिझम  
आणि तुझी सर्व काही  
आम्ही लावले आहे कसाला  
त्यातून झालं हे ध्वनित  
आपलीच सावली आपल्या पायांमधे झाकू शकते

(तुही इयत्ता कंची, पृ. १११)

ह्या विचारांनी देशात क्रांती होऊ शकते. हा परिवर्तनवादी विचार नामदेव दसाळांनी मांडला आहे.

वास्तवातील धर्म, संस्कृतीचे चित्र वेगळे दिसत असल्यामुळे दसाळ हे धर्मग्रंथ, परमेश्वर, राजसत्ता, त्यातून निर्माण झालेल्या चळवळी - या सान्यांचा विद्रोह मोठ्या आक्रोशाने मांडतात. विद्रोहाची भाषा वापरताना दसाळांची शब्दकळा गोफणीतल्या गोठ्यांचे, बंदुकीच्या गोळीचे व तोफांच्या गोळ्याचे रूप घेते. दसाळांच्या कवितेत

वेदना आणि विद्रोहाची सुरेख गुंफण आढळते. दसाळांची वेदना प्रभावी आहे. विद्रोह उच्चकोटीचा आहे. म्हणूनच त्यांची कविता ही मराठीमध्ये वेदने बरोबरच विद्रोहाला सन्मानाचे स्थान देते.

संदर्भ -

(१) गोलमिठा. (२) मूर्ख म्हातान्याने डोंगर हलवले. (३) तुही इयत्ता कंची तुही इयत्ता. (४) या सत्तेत जीव रमत नाही. (५) गांडू बगीचा. (६) भालचंद्र फडके - दलित साहित्य वेदना व विद्रोह. (७) बाळकृष्ण कवठेकर - दलित साहित्य एक आकलन.

## भेगाळली भुई

थेंब थेंब पाण्यासाठी  
आसुसले मन  
कितीतरी दिवस ना  
बरसले घन

भेगाळली भुई, नाही  
उगवले काही  
होई जिवाचा आकांत  
तन लाही लाही

समस्याही किती खोल  
सोसाया आघात  
निर्गर्गाची अवकृपा  
होते वाताहत

एकमेकांची ही साथ  
हात हाती धरू  
मुकू नका जीवा कोणी  
गाव उभा करू

पाणी अडवू जिरवू  
नवी झाडे लावू  
भेगाळल्या या भुईला  
रवास नवा देवू

-पंडित कांबळे

'संकल्प', सांजा रोड, शिवाजी नगर,  
उस्मानाबाद-४२३५०१  
प्रमणभाष-९४२१३५६८२९



### ३. 'महाराष्ट्रतील जल-समस्या : कांराणे व उताप'!

प्रा. एम. के. नन्नावरे  
अर्थशास्त्र विभागाचे प्रमुख  
श्री शिवाजी कला, वाणिज्य व  
विज्ञान महाविद्यालय, अकोट

प्रा. एस. पी. कोठेकर  
सहायक प्राध्यापक, इतिहास विभाग  
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#### सारांश :

मानवी विचाराणासाठी पाणी हा अत्यंत महत्वाचा घटक आहे. मानवाचा स्थूल वरि सुट्टीतील पंचमहाभूतांचे व्यटीकरण समजले जाते या पंचमहाभूतांपैकी हे एक तत्त्व आहे. सर्जीव सुट्टीच्या अस्तित्वासाठी पिण्याच्या पाण्याला महत्वाचे स्थान आहे. जीवसृष्टी ही पृथ्वीला लाभलेली निर्मलत देणगी आहे. पृथ्वीवरील जीवसृष्टीच्या अस्तित्वाच्या दृष्टीने जलसंपत्ती ही अत्यंत महत्वाची व अनमोल वस्तू आहे. जलसंपत्तीचे वनस्पती व प्राणीजीवन विकसीत झाल्याचे आढळून येते. मानवाचे देखील जलस्रोतांच्या सभोवतालीच आपली वस्ती केली असून जगातील न्यूयॉर्क, बिजिंग, मुंबई, कोलकाता इत्यादी प्रमुख शहरे ही नद्यांच्या तटावर वसलेली आहेत. पृथ्वीच्या सुमारे ११० दशलक्ष चौ. कि.मी. पृष्ठभागाच्या म्हाजिच ७० ते ८०% भाग पाण्याने व्यापलेला असून पृथ्वीवर एकूण ४,८८,९०,१०० अब्ज टीएमसी पाणी आहे. पृथ्वीवर उतललेल्या असणाऱ्या एकूण जलसंपत्तीपैकी ९७.२४% पाणी महासागरांमध्ये असून हे पिण्यायोग्य नाही. उतर व दक्षिण ध्रुवावर हिमनग आणि हिमनद्यांमध्ये २.१४% शुद्ध जलस्रोत आहे परंतु तो वापरता येणे अशक्य आहे. नद्यांमध्ये एकूण पाण्याचा केवळ ०.००३% पाणी आहे. तर गोडवा पाण्याच्या स्रोतात ०.००९% पाणी आहे.

#### प्रस्तावना :-

आज पाण्याचा प्रश्न हा पर्यावरणीय समस्या नसून ते पूर्णतः नियोजनाच्या अभावामुळे निर्माण झालेला प्रश्न आहे. पृथ्वी, हवा, आकाश आणि अग्नी यांच्या सहयोगानेच पाणी पृथ्वीवरील जीवांचे संपादन करत असेल आहे. २१ व्या शतकाच्या उदरगतावर पाणी देवाईची समस्या उत्कृष्ट प्राण कर पाहत आहे. पृथ्वीचा पृष्ठभाग जरी ७५% पाण्याने व्यापलेला असला तरी त्यापैकी ९७% पाणी जलजलास गेले आहे व हे गेले पाणी समाजाच्या विविध उपयोगासाठी उतलले आहे. माणसाच्या शरीरात साधारणपणे ७०% पाणी आहे हे पाणी १५% कमी झाले तरी मृत्यु निश्चित आहे. नैसर्गिक आपत्ती, अवैकी पाऊस, अतिवृष्टीतला व जमिनीची धुप यामुळे पात्राची पातळी उतळत होते व जमिनीची पाणी साठवण्याची क्षमता कमी होते. आज वाढत्या लोकसंख्येमुळे पिण्याच्या पाण्याचे संकट हे एक मुख्य कारण आहे. पाण्याच्या साठवाच्या प्रमाणापेक्षा लोकसंख्या वाढली आहे पाण्याचे पाणी कमी झाल्यामुळे नद्या, नाले, विहिरे यांच्या पाण्याची पातळी घटलेली आहे व शुद्ध पाण्याचे स्रोत कमी होत आहे. पिण्याच्या पाण्याच्या मनीस प्रदानमुळे वेगळे दराक पाणी संकटाचे असू शकते असे म्हणणे वाचता येऊ नये त्यासाठी २१ व्या शतकात विकासामाच्या प्रक्रियेत पाण्याची उतललेला हा दुर्गिळ भौतिक साधनसंपत्ती म्हणून अतिशय महत्वाची भूमिका घराविचार आहे. वाडव्यात संपूर्ण आणि प्राचीन संरक्षणी पाण्यावर अवलंबून आहे.

#### श्री. एम. के. नन्नावरे :-

राज्यात वाचंवार जलसंकट निर्माण होत असून सध्या दुष्काळाची स्थिती निर्माण झाली आहे. या

#### १) जलसंपत्तीचे विषय विवरण :

मान्य पर्यटन हा महाराष्ट्रतील जलसंपत्तीचा एकमेव स्रोत आहे परंतु महाराष्ट्राच्या परिचयस असाणाऱ्या सहाजी परत सांगणुळे अथवा साहजिक वेगळे नैसर्गिक मान्य वारे अडविले जाताना त्यामुळे कोकण किनारपट्टीवर २००० ते ३५०० मि.मी. पाऊस पडतो. तर साहजी परतलाच्या पूर्वेस असणाऱ्या पश्चिम महाराष्ट्र व विदर्भातील अनुक्रमे ५०० ते ७५० मि.मी. इतका अत्यल्प पाऊस पडतो.

#### २) सुयोग्य नियोजनाचा अभाव :

भासाच्या १४.५९% पाणी महाराष्ट्रात उतलले असून देशाच्या कुलनेत २९.१०% वापरायोग्य पाणी एकट्या महाराष्ट्रात उतलले आहे. लोकसंख्येतील वाढ, औद्योगिकीय विकासांनी, पाण्याची सुविधांचा विकास, औद्योगिक प्राची यामुळे पाण्याची मागणी मोठ्या प्रमाणात वाढत गेली परंतु त्या प्रमाणात जलसंपत्तीचे नियोजन व व्यवस्थापन होऊ न शकल्याने अद्यापही ८२% क्षेत्र कोरडवाहू ५२% क्षेत्र अवर्षण प्रचल आहे.

#### ३) दुष्काळाचे संकट :

राज्यात पुर्वेचा प्रमाणित जलसंपत्ती उतलले असूनही मराठवाडा व पश्चिम महाराष्ट्रातील काही जिल्हात दरवर्षी अत्यल्प परिस्थिती निर्माण होते सध्या राज्यातील १३ जिल्ह्यात सरकारने दुष्काळ जाहीर केला असून यामध्ये पश्चिम महाराष्ट्रातील नाशिक, अहमदनगर, पुणे, सातारा, सांगली व सोलापूर या जिल्ह्यांचा तर मराठवाडातील औरंगाबाद, नांदेड, अहमदनगर, बीड, उस्मानाबाद व नांदेड या जिल्ह्यांचा समावेश आहे. याशिवाय उतर महाराष्ट्रातील जळगाव व बुलढाणा या जिल्ह्यांचा समावेश करण्यात आला आहे. राज्यातील १३.००० गावांना पिण्याच्या पाण्याची देवाई जाणवत असून यापैकी १५८६ गावे दुष्काळग्रस्त म्हणून जाहीर केले आहेत. यामध्ये औरंगाबाद जिल्ह्यात सर्वाधिक म्हणजे ११०६ गावांचा समावेश आहे. राज्यातील दुष्काळी भागातील पिळे जवळ द्याक झाली असून घळक्यांना उजाळे झाल्या आहेत. पिण्याच्या पाण्यासाठी मागणी बरोबरच प्राण्यांची मोठी तहकड होत आहे. पशुधनाच्या सुलक्षणीत सरकारने राज्यात ४८८ जनावरांच्या छावण्या सुरू केल्या असून यात ४,१४,२०५ जनावरे दाखल करण्यात आली आहेत.

#### ४) नागरीकरण व औद्योगिकीकरणासाठी पाण्याची वाढती मागणी :

वाढती लोकसंख्या बरोबरच उच्च गृहजीवन, शिक्षण, रोजगार व पाण्याचे औद्योगिक वा कार्यामुळे प्राणीन लोकसंख्येचे शहरी भागात होणारे स्थानांतरण यामुळे शहरी भागात पिण्याच्या, औद्योगिक वापर लोच धरुणुली वापरसाठीच्या पाण्याच्या मागणीत मोठी वाढ होत आहे २००३-०२ मध्ये राज्यात सिंचनासाठी ६२.२९% तर विार सिंचनासाठी ३०.७१% पाण्याचा वापर केलाचे दिसून येते. तर २०१०-११ मध्ये सिंचनासाठी पाणी वापरता ५६.५६% पर्यंत घट झाली असून विार सिंचनासाठीच्या पाण्याचा वापर ४२.४४% इतकी वाढ झाल्याचे आढळून आले. राज्यातील उद्योगांना प्रतिदिन १९४ कोटी लिटर पाण्याचा वापर असून सध्या १२८.६ कोटी लिटर पाण्याचा वापर औद्योगिक क्षेत्रात केला जातो. महाराष्ट्रातील शहरीकरण व औद्योगिकीकरणामा प्रमाणातील वाढी बरोबरच शेततीचे पाणी हे शहरे व उद्योगधंद्यासाठी राखून ठेवले जात आहे याचा परिणाम म्हणून राज्यातील सिंचन क्षेत्रात उघडीत वाढ घडून येत नाही.

#### ५) जलसिंचन क्षमतेचा अपुस वापर :



उ) लोकसंस्थानेचे निवेदन :

आज देशाच्या लोकसंस्थानेचा पाठ झाली आहे हा प्रचंड लोकसंस्थानेचा पाणी मिळणे आवश्यक आहे. देशाच्या प्रमाणे देशाच्या लोकसंस्थानेचा पाणीचे प्रमाण जात आहे म्हणून लोकसंस्थानेचा निवेदन करणे आवश्यक आहे.

(८) दुर्धित होणाऱ्या पाण्यावर प्रक्रिया करणे :

राज्यातील औद्योगिक कारखान्यापासून निवृत्त होणाऱ्या पाण्यावर व मलप्रवाहावर प्रक्रिया करून पाण्याची वचत करता येते. हे काम औद्योगिक विकास मंत्रालयाकडून उभारणे व सक्तीचे करावे.

(९) पाणी साठवण्याच्या पध्दतीवर जोर :

राज्यातील पाण्याची पातळी जास्त खोल न जाऊ देता आज उपलब्ध असलेल्या पाणी साठवण्याच्या बाराही मोहिमे करायला उभारणे होऊ शकते व पाणी साठवण्यासाठी सुयोग्य पध्दतीवर भर घाला जातो. आज वायव्येला कुंडा मध्ये व पुनरागमदीन कच्छ जिल्ह्यात विडाज हा उबळ विहिरीत पाणी साठविले जाते. घराच्या छानावर पडणारे पाणी साठवून ठेवून विहिरीत पाणी घालून त्याचा वापर करता येतो. प्रसिद्ध यंत्राधिकारी मंसल टाकळकर आपल्या शब्दात लिहित, 'पाणी पडत असेल तर त्याला घालावता लावा तेच चालत असेल तर त्याला धावावता लावा आणि ते वांढले तर त्याला जमीन खिसा' अशा काव्यरुपी रचनेचा प्रत्यक्षात उपयोग घ्यावता येतो.


१०) वृक्षांची जोपासणा व रोजणार :

जे मकूर लागू झाले की कालात त्यांच्यासाठी झाडे लावण्यासाठी याही खातेचे, मोठे लागणे याची कामे कितीतरी त्याचा प्रश्न सुटेल हीच झाडे मोठी झाली तर कोतवली येजना राववाची या परिसरात राहणाऱ्या कामगाराने ज्यांची जमीन राखले आहे त्यांच्याकडून वाढू शकते तेणे व त्याच्या येथे लावता येतील त्यांचे वृक्षे म्हणजे काम मिळते. उदनिर्वाहाचा प्रश्न सुटू शकतो.

**M.M.T :-**

पाणी हे संसाधन निसर्गाने मानवाला विनामूल्य दिलेले देणगी आहे. पाणी चार नियोजनाचा अभाव हे सुमार उरसा झाल्यामुळे कुळाकालासाठी आपली अली आहे. पाण्याचे दीर्घकालीन संकटाचा सामना करताना सगळ्या सहकाऱ्यांची अनेक आहे. माहिती काही तलांचा मने अनेक दस्तक पाणी संकटाचे म्हणून ओळखले जाईल यात दुमत नाही. त्यात महाराष्ट्रात या प्रश्नाला माहितीने केले जात आहे. आसा देश, राज्य, तलावाचा, विहिरीचा समजला जात असूनही त्यामुळे पाण्याचा पाण्याचा तुटवडा जाणवतला लागला तर अनेक प्रश्नांना तोंड द्यावे लागेल. ही समस्या दूर करण्यासाठी आपल्या प्रत्येकाजवळील आनंदविषय, विद्य, प्रचंड कौशिक क्षमता आणि मनोबल याचा उपयोग करून जलाचे महत्त्व लक्षात घेता हा प्रश्न सहज सुटू शकतो.

**शेवटी :-**

- १) सुवर्ण महोत्सवी महाराष्ट्राची बदलती अर्थव्यवस्था - प्रा. डॉ. जे. एक. पाटील
- २) माती विषयकाय
- ३) सिंचन आयोग अहवाल
- ४) बुलॅटिन ऑफ युनिफ अकेडमी, पुणे सप्टेंबर २०१४
- ५) बुलॅटिन ऑफ युनिफ अकेडमी, पुणे फेब्रुवारी २०१५
- ६) 

**4. "IMPACT OF E-ACCOUNTING"**

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**Abstract:**

Accounting is the information system that measures business activity, processes the data into reports, and communicates the results to decision makers, which could be individuals, Business, Investors, or Tax Authorities. Accounting professionals have to face a number of situations and problems while performing the accounting and audit of companies operating in electronic environment.

**Introduction:**

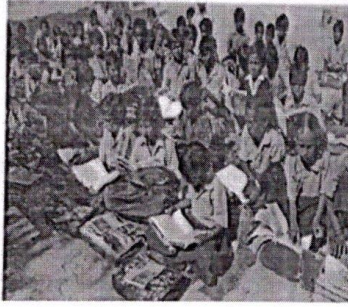
The introduction of advanced information technology (IT) has changed the way that mines", or organizations conduct their businesses. The capabilities of IT have led to the Munich of various information systems, such as, accounting information system (AIS), manufacturing resource planning system (MRP) and human resource system (HRM) m We the various aspects of a business.

The proper use of this technology may create competitive advantage for most Business and organizations in all fields, including accounting. As a single largest user of IT and purveyor of information for the organization, the evolution of IT in accounting has transformed the accounting information flow within and outside the organizations. Previous inefficient traditional paper-based manual accounting methods caused some problems, such as, wrong data entry, slow and inefficient task performance and massive utilization of paper products. Lack of data security was also a major issue. But, the emergence of computer based IT has changed not only the accounting profession itself, but also the accounting information systems and practices. IT as a key resource in accounting and financial information processing has enabled the tedious task of manual bookkeeping to be substantially eliminated through the implementation of computerized accounting information systems. The accounting-related task performance or task performance outcome



प्राथमिक शिक्षण मोफत व सक्तीचे असा कायदा करणारे  
डॉ. पंजाबराव देशमुख

डॉ. प्रशांत प्र. कोटे  
इतिहास विभाग प्रमुख, श्री शिवाजी कला, वाणिज्य व विज्ञान महाविद्यालय,  
आर्कोट, जि. अकोला



प्रस्तावना  
ब्रिटिशांनी भारतीयांना इंग्रजी भाषेत शिक्षण देण्याची सुरुवात केली ते भारतीयान्तराक्षर असणाऱ्या प्रेमातून नव्हे तर प्रशासकीय गरज या उद्देशाने सुरुवात केली. त्यातूनच भारतात बंगाल, कलकत्ता, मद्रास, बनारस इ. ठिकाणी विद्यालये स्थापन झाली. इ.स. १८३३ च्या चार्टर अक्ट नुसार कंपनीने भारतीयांच्या धर्मप्रसाराच्या उद्देशाने इंग्रजी भाषेत शिक्षणासाठी विविध ठिकाणी नि:शुल्क शाळा उघडल्या. इ.स. १९६३ मध्ये कलकत्ता जवळ असलेल्या श्रीरामपूर येथे मिशनऱ्यांनी इंग्रजी शाळा उघडल्या. इ. स. १८३५ मध्ये केंद्रीय काळात राजा राममोहन राय च्या आग्रहापे मॅकॉलेच्या अहवाला नुसार भारतीयांना इंग्रजी भाषेतून शिक्षण देण्याचा निर्णय झाला. त्या भागे पारचात्य संस्कृतीचा परिचय भारतीयांना होईल हाही एक उद्देश होता. परंतु त्या नंतरच्या काळात शिक्षण कडे विशेष लक्ष दिले गेले नाही. लॉर्ड डलहौसीने मात्र विशेष लक्ष देऊन सर चार्लस वुड च्या नेतृत्वा खाली कमीशन नेमले. त्याने सादर केलेल्या अहवाला नुसार शिक्षण क्षेत्रात महत्वाची पावले उचली त्यामुळे अनेक विचारवंत डलहौसीला आधुनिक शिक्षण प्रणालीचा जनक मानतात. त्यामुळे

शिक्षणाच्या क्षेत्रात प्रगती होत गेली. त्यामुळे भारतात पुरोगामी विचारांची सुरुवात झाली. संपूर्ण देशाचा विचार करीत असतांना महाराष्ट्रही अशा पुरोगामी विचाराचा पुरस्कर्ता राहीला आहे.

आधुनिक कालखंडात महाराष्ट्रात प्रबोधनाच्या क्षेत्रात फार मोठ्या प्रमाणावर कार्य झाले. आधुनिक महाराष्ट्राच्या जडनघडनीत शिक्षणाच्या विकासाची भूमिका महत्वाची राहिली आहे. समाजाच्या तळातील कुचीमान स्तरातून महात्मा ज्योतीराव फुले, राजर्षी शाहू महाराज यांनी संपूर्ण देशात शिक्षणाच्या क्षेत्रात कांतीकारक कार्य केले. नंतरच्या काळात ज्या लोकांनी हे शिक्षण विकासाचे कार्य पुढे नेण्याचे कार्य केले त्या मध्ये कर्मवीर भाऊराव पाटील, डॉ. पंजाबराव देशमुख यांचे नाव आग्रहाने घ्यावे लागते. त्यांनी समाज परिवर्तन घडून आणण्याचे असेल तर तळागळतील कष्ट करणाऱ्या समाजातच शिक्षणाची व्यवस्था असणे आवश्यक आहे हाच उद्देश समोर ठेवला. त्यात डॉ. पंजाबराव देशमुख यांचे कार्य येथे अग्रेसरने हा या शोध निबंधाचा उद्देश आहे.

डॉ. पंजाबराव देशमुखांना गाऊसाहेब या नावाने ओळखले जातात. त्यांचा जन्म एका शेतकरी कुटुंबात झाला. त्यांनी लहानपणा पासून शेतकऱ्यांचे जीवन व तत्कालीन गावची स्थिती जवळून पाहिली व अनुभवली होती. त्यांच्या गावात चौथा वर्ग नसल्याने त्यांना स्वतः दोन वर्षे तिराऱ्या वर्गात राहावे लागले होते. त्यानंतर त्यांची दुसऱ्या वर्षी चादूरदळे येथे शिक्षणाची व्यवस्था करण्यात आली. पण त्यांच्या सोबत शिकत असलेला, त्यांचा महार जातीतील लोभ्या नावाचा वर्ग मित्र आपली आर्थिक परिस्थिती नसल्याने पुढे दुसऱ्या गावाला जाऊ शकला नाही. त्याच वेळी त्यांनी आपल्या आई जवळ बोलतांना म्हटले होते. आई लोभ्या हा आपल्या गावात शाळा नसल्यामुळे शिकू शकला नाही. म्हणून आपण आपल्या गावातच शाळा सुरू करू. या वरून डॉ. पंजाबरावांमध्ये लहानपणा पासूनच सामान्य जनते विषयी असलेली आस्था व शिक्षणाविषयी असलेली आवड दिसून येते.

१६ व्या शतकाच्या उत्तरार्धात सामाजिक व धार्मिक प्रबोधन काळात शिक्षणावर देण्यात आला. विसाव्या शतकाच्या पहिल्या दशकात महाराष्ट्रात ००,००००१ इतकेही साक्षरतेचे प्रमाण नव्हते. बहुजन समाजातील हे निषण स्वरूप पाहून कोल्हापूरच्या राजर्षी शाहू महाराजांनी इ.स. १९०७ साली अखिल भारतीय मराठा शिक्षण परिषदेची स्थापना केली. त्यांनी बहुजन समाजात शिक्षण प्रसार करण्यावर विशेष नर दिला. त्यांनी कोल्हापूरत मराठा, लिमायत, पांचाळ, जैन, मुसलमान, शिंपी, वैश्य, गरजू व होतकरू विद्यालयांना शिष्यवृत्त्या देऊन त्यांना शिक्षण घेण्यास महाराजांनी प्रोत्साहन दिले. त्यांनी आपल्या राज्यात प्राथमिक शिक्षण सक्तीचे व मोफत केले. इ.स. १९१७ मध्ये 'खामगाव येथे अखिल भारतीय मराठा शिक्षण परिषद झाली.' राजर्षी शाहू महाराज या परिषदेचे अध्यक्ष होते. ते आपल्या भाषणात म्हणाले, 'कोणताही देश किंवा समाज शिक्षणा शिवाय विकशील झाला नाही. म्हणून शिक्षण मोफत व सक्तीचे केले पाहिजे. आपल्यास व आपल्या देशास पुढे आणायचे असेल तर आपल्याला उद्योगधंदे शिकले पाहिजे.' या त्यांच्या भाषणाचा परिणाम बहुजन मराठा समाजावर झाला आणि त्यातून बहुजन समाजाच्या विद्यार्थ्यां मध्ये उच्च शिक्षण घेण्याची उर्मी निर्माण झाली. डॉ. पंजाबराव देशमुखही या अधिवेशनात होते.



Research Paper in  
English

Thematic Technique in the Novels of Raja Rao

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## Abstract

Raja Rao (1908-2006), whose "advent on the literary scene has been described as the appearance of a new star shining bright" is the youngest of the great trilogy. He is not a prolific writer like R. K. Narayan and Mulk Raj Anand who have to their credit a dozen novels each and numerous short stories. Even so, he is one of the most significant writers of modern India. At the time of writing he has published five novels, *Kanthapura* (1938), *The Serpent and the Rope* (1960), *The Cat and Shakespeare* (1965), *Comrade Kirillov* (1976) and *The Chessmaster and His Moves* (1988). *The Chessmaster and His Moves* is characterized by an array of meaningful symbols. Here "The Chessmaster" himself and "his moves" are what He makes man do. Raja Rao's place in the realm of Indian English fiction is safe as the most Indian of novelists in English, as stylist, symbolist, myth-maker, the finest painter of the East-West encounter and a philosophical novelist. The present paper is about the smell of Indianans and love for soil in Raja Rao's novel.

## Keywords

Aphorisms, Paradoxes, Imperialism, East-West encounter.

## Introduction:

The longest journey begins with a single step said Lao Tse, the Chinese Philosopher and the entire corpus of India's most distinguished novelist Raja Rao seems to be a poetic testament of this truth. Raja Rao occupies the pride of place among the Indo English novelists writing today. His works have attracted considerable critical attention both in India and the knowledgeable circles in the West. The fictional technique of Raja Rao is marked by a constant and engaging search; the true nature of his novelistic craft is essentially exploratory.

Vasant A. Shahane opines "The intersection between fiction and reality is at the heart of Raja Rao's created work."

Indian writer at novels and short-stories, whose works are deeply rooted in Brahmanism and Hinduism. Raja Rao's semi-autobiographical novel, *'The serpent and the Rope'* (1960), is a story of a search for spiritual truth in Europe and India. It established him as one of the finest India stylists writing is my Dharma. Rao's involvement in the nationalist movement is reflected in his first two books. The novel *'Kanthapura'* (1938) was an account of the impact of Gandhi's teaching on non-violent resistance against the British (Redman). The story is seen from the perspective of a small Mysore village in South India. Rao Borrows the style and structure from

Indian vernacular tales and folk-epic (Ramayana and Mahabharata). The work was highly praised by the English writer E.M. Forster, whose master A passage to India (1924) criticized British Imperialism. However Raja Rao's India isn't a certain geographical or historical entity but more a philosophical concept and a symbol of spiritual calling. According to Raja Rao.

"The Indian novel can only be epic in form and metaphysical in nature. It can only be story within story to show all stories are parables."

This is the technique he has followed and thus given a western art form a distinctively Indian character. The style is marked by sensibility and high seriousness. Quotations from Sanskrit, Kannada, Hindi and French verses are sprinkled here and there.

The syntax and accent of the English language are changed to lend it the rhythms and the incantatory effect of the Sanskrit language. Aphorisms, paradoxes, clever inversions and rhetorical expressions are very common in the novel as in the Vedic scriptures. Raja Rao has added a new dimension to his language, that of symbolic suggestion. Rao's themes include the metaphysical apprehension, of God, the nature of death immortality, illusion and reality, duality and non duality, existence and destiny, karma and dharma, the quest for self knowledge, roots and rootlessness, marital problems, East-West encounter, realization of self dissolution of self and platonic love.



**Summary of the Chess Master and His Moves:**

Considered to be Raja Rao's magnum opus, the chess master and his moves is in many ways a continuation of the serpent and the Rope. In its spiritual concerns and metaphysical preoccupations and in its glorification of the feminine principle, the novel comes very close to its predecessor. In the bare outline of the story as well as characterization, particularly of women, the two works bear on astonishing degree of similarity.

The protagonist Sivarama Sastri like Ramaswamy has lost his mother early in life and is confronted by a sense at emptiness. Thus begins his search for the mother principle that carries him through many vicissitudes. He is a mathematician goes to France on a French Government scholarship to work in the institute for the pure mathematics in Paris. He falls in love with a young French Actress by name Suzanne and their intimate relationship is the focus at attention in the early part of the novel. But in course of time Suzanne drifts away from Sivarama to Michel and Sivarama himself turns to Mireilla, a married woman and a mother. Mireilla is an intelligent woman, an art historian researching in art history. What with her unmistakable beauty to boot she can entice the young man Sivarama who feels the world to be subliminally real with Mireilla by his side. But even this relationship cannot last long, for fundamental differences in their very outlook on life come in the way. He is subsequently drawn to princess, Jayalakshmi Devi (Jaya in short), largely because of her interest in abstruse matters who in many ways recalls to our minds Savithri at the serpent and Rope. The novelist's adoration of the feminine principle finds its supreme expression in the exaltation at these two characters. That both of them are highly idealized is of course very much in evidence. Sivarama's admiration for this Rajput princess is total and unconditional. But he cannot consummate his love. For Jaya is a married woman. Hence his relationship with all three women peters out. And he turns inward to find an answer to his private sorrow, transforming his struggle into a metaphysical exploration in the process. The answer he finds is.

"Marriage is marriage that never takes place. The not two alone is marriage. [...] So there is indeed no marriage." Above reference is compelled with sonnet 116.

The Well-known Dramatist and Poet William Shakespeare uttered in his sonnet

"Let me not to the marriage of true minds

Admit impediments. Love is not love

Which alters when it alteration finds,

Or bends with the remover to remove: O no; it is an ever-fixed mark....." Sonnet 116 is about love in its most ideal form. The poet praises the glories of lovers who have come to each other freely, and enter into a relationship based on trust and understanding. The above lines reveal the poet's pleasure in love that is constant and strong, and will not "alter when it alteration finds." The following lines proclaim that true love is indeed an "ever-fixed mark" which will survive any crisis. Sivarama's search for the absolute is the stuff of this most ambitious novel described as the first part of a trilogy.

Breath taking in its sheer sweep and range of concerns, the novel with its deeply engaging meditations on numbers: zero infinity, dissolution of contradictions and similar matter pertaining to the self/self concludes with Sivarama's preparations to return to India, the 'Mother of us.....', who would protect us with here vast filigrees Pallo."

The wheel comes full circle when resting his head on Sma's bosom he feels a sense of being home.

According to certain critics, Raja Rao ranks as the greatest novelist heart to Mulk Raj Anand, in the hierarchy of English novelists; but in our opinion, he is equal to R.K. Narayan as a novelist M.K. Naik points out "His (Raja Rao's) position a perhaps the most India of India English novelists as probably the finest painter of the East-West confrontation as symbolist, stylist and philosophical novelist and as a original voice in Modern fiction undoubtedly remains secure."

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## of Attaining the Infinite in the Finite as the Theme of Rabindranath Tagore's *Sanyasi*

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### Introduction

The *Sanyasi* (Nature's Revenge) is the earliest and the simplest of the regular dramas. It presents a recurring theme in Tagore's work —the joy of attaining the infinite in the finite. The play is described by the poet himself as the introduction to his future work, as the sum total of his entire literary output, as the deliverance from bondage. This drama marks a stage as well in the evolution of the poet. He was immersed, like the *Sanyasi*, so long in his own self and like him he emerged into the open-air life of natural beauty and human love, joy and sorrow. He, in the words of Ernest Rhys, "advanced out of the stage of youthful desire and entered upon the fair old full of folk", and became aware of those aspects of life to express which a poet seeks both dramatic and lyric forms of art.

In *Sanyasi* Tagore undertakes the idea that God is engaged all the time in creation in spite of the conflicting pulls of different forces. However such a faith, like that of Wordsworth was not the culmination of his realization. He presents the thesis that pantheistic God, being an impersonal phenomenon is incapable of interacting with the sensibility of human soul. It is an abstract vision and the exchange of love is not possible with an abstract ideology. Tagore not only conceived the possibility of man's longing for Union with God but also went to the extent of establishing that even God is keen to seek interest in individual man for his own realization. His desire to transmit delight to human heart, leading to self realization includes the need of expressing his love through service. It is, therefore, that the three faculties of the intellect, the emotion and the urge to work can be realized only through man:

God is not away from us, nor in the churches.  
He is within us. He pervades unperceived life  
and death, pleasure and pain, sin and piety, union  
and separation. This earth itself is his eternal  
temple. This live conscious, colossal temple is  
being recreated constantly in the variety of new  
shapes. There is nothing new on it, everything in  
it is in constant flux and yet its profound unity,  
its reality and its abiding character is never lost,  
because in this flitting diversity an abiding truth  
is manifest.

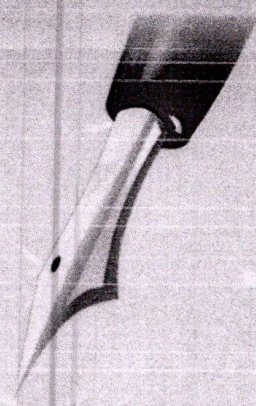
There are a number of art. There are representatives of the varied world of men and women with their trivial occupations from which the *Sanyasi* has completely



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6





## Exploring the Idea of Liberation in Rabindranath Tagore's *The Post Office*

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### Introduction

No other concern occupied the mind of Rabindranath Tagore more than defining, emphasizing and developing the dimensions of the concept of Freedom in his writings, specially the plays. According to him, "the very mind of Man has its immediate consciousness of will within him which is aware of its freedom and ever struggles for it." It is a desire which is innate in man which seeks its manifestation in a continuous expansion of its dimensions. Tagore holds that this spirit of freedom "is there to help a creature who has been left unfinished by his designer", thus imposing a certain moral obligation towards creative progress.

On a temporal level, Tagore uses the notion of freedom to decry narrow nationalistic boundaries, governed by myopic ambition and greed. We look at four of Tagore's plays—*Dakghar (The Post Office)*, *Prakritir Pratishodh (Sanyasi)*, *Achalayatan (The Immovable)*, *Muktadhara (The Waterfall)* and *Raktakarabi (Red Oleanders)*, which bring out different facets of his broader abstraction of freedom.

In *Dakghar (The Post Office)*, young *Amal*, the protagonist, bound with numerous strangers with the spontaneity and guilelessness typical of most children. The play cleverly unravels Tagore's thoughts on freedom. Being ill, young *Amal* is confined to his bed by the *Kaviraj's* orders and isn't allowed to step out of the house. Lying on his bed, he watches the world go by, as he makes friends with passersby a *curd seller*, a *watchman*, a *flower girl*, and an *old man*.

Even though *Amal* is physically bound, he isn't a prisoner in the spiritual or creative sense. His flourishing imagination, coupled with his disarming affability, connects him to the hearts of seemingly disparate people. For, as Tagore writes in his foreword to S Radhakrishnan's *The Philosophy of Upanishads* "When our self is illuminated with the light of love, then the negative aspect of its separateness with others loses its finality, and then our relationship with others is no longer that of competition and conflict, but of sympathy and cooperation." Young *Amal* is an embodiment of the child heart that has not yet been contaminated by man-made divisions of social or economic class. Thus, *Amal* can mingle with his fellow humans with complete ease and no sense of separation. Freedom in Tagore's book also means the liberty to make mistakes and learning from them. The main theme of *The Post Office* seems to be the liberation of the child *Amal* from the bondage of various Kinds - social psychological, emotional and spiritual.

As all of us might be known freedom of all kinds has been the prime quest of Tagore. This theme occurs in several of his poems and plays. *Gitanjali* (Poem 28) says:

Freedom is all I want ....



variation upon the theme of freedom. Then he says, "I can see all the stars now twinkling from the other side of the dark." What is this other side of the dark? In all probability it is the invisible, the infinite, the spiritual. Seeing the stars twinkling from the other side of the dark suggests, uncannily, the heavens, a liberation from the drab monotony of this crude world. We may, therefore, say that *Amal's* death is a kind of death into life, a sort of liberation from kinds of bondage of life.

On the simplest level, the post office receives and gives letters, which contain information. It was the most popular medium of communication of the modern electronic media. There have been several poems on anxiously awaiting the postman. A man who is looking wistful towards a post office is a man longing for some information from somebody. Communication is itself a kind of ventilation. Thus, the symbol of 'post office' gives a concrete base to the theme of freedom from all kinds of bondage - physical, emotional, psychological and spiritual, which is the leitmotif of this play.

But this post office is not just an ordinary one nor is its Postmaster an ordinary one. The Postmaster is nobody else but God sending divine messages which are delivered through this Post Office. The man who plays a part in this work hopes to make his life meaningful. Perhaps this is why *Amal* says he will ask the king: "Make me your postman that I may go about, lantern in hand, delivering your letters from door to door." and "I shall ask him to make me one of his postmen that I may wander far and wide delivering his message from door to door."

#### Conclusion

Tagore said that the play *The Post Office* should be read through the eyes of a child. Sure. Its hero, *Amal*, is a child and is the centre of all the activities in the play. Tagore ardently pled for giving the children the liberty to think and feel in their own way. Some of his observations on childhood remind us of Wordsworth's glorification of child e. g, "But children and those who are not over-educated, dwell in that primal paradise where men can come to know without fully comprehending each step. And only when that paradise is lost comes the evil day when everything needs to be understood". (*My Reminiscences and My Boyhood Days*).

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## तुकडोजी महाराजांचे शिक्षण विषयक विचार

प्रा. संतोष नारायणराव वावगे  
श्री शिवाजी महा. अकोट  
मो.नं. 9822733733

सातत्याने चाले त्याची चाकरी ।  
सेवाभावि ।

शिक्षकानेच दुर्व्यवहार केला, डॉक्टरानेच जर  
एवजी जहर दिले आणि पुढारीच जर दारु पिऊन तमाशे  
सांगले तर गावकऱ्यांनी कुणाकडे पाहावे. तेंव्हा महाराज  
त की, जे आपण लोकांना शिकवितो, ते आपण  
यात आणावे. नुसते पुढारी म्हणून मिरवण्याने आदर  
नाही. प्रत्येक जण कुणीतरी पुढाकार घेण्याची वाट  
तो. दुसऱ्यांच्या चुका काढत असतो. तेंव्हा नेहमी  
न घेईल असे अंगी आकर्षण व्हावे. पवित्र आहार  
चेहऱ्यांवर प्रसन्नता, वृद्धी, बल, चातुर्य वर्तनात हवे.  
राहणी व उच्च विचार असावे. सार्वजनिक कार्य करावे,  
पर भाव मानू नये. प्रामाणिकता, सरळपणा आणि प्रेमळता  
असावी. वेळेचे आणि शब्दाचे बंधन असावे, लोकांच्या  
याची लाज बाळगू नये. लोकांची मने जिंकून आपलेसे  
आणि ज्याला समाजाचा जिवाळा आहे, त्याला आपल्या  
त सहभागी करावे. ढोंगी, गुंड या लोकांपासून सावधान  
ये. बोलण्यात जिंकतात आणि आचरणात मागे राहतात.  
बोलक्यांपेक्षा अबोल कर्तबगार व्यक्ती बरा. सर्वांनी मिळून  
करावे. गांव आदर्श करण्याचा हा एकच उत्तम मार्ग आहे.

'आदर्श न करितां जीवन ।

कैसा मिळेल आदर्शाचा यांना ।

कैसा आदर्श होय निर्माण ? तुकडया म्हणे ।'

प्रचार हा कोणत्याही कार्यासाठी सर्वात उत्तम असा  
आहे. आणि तुकडोजी महाराजांनी 'ग्रामगीतेची निर्मीती  
साठी केली. प्रचाराशिवाय सेवादेखील हा एक मार्ग आहे.

'प्रचार न करता सेवा ।

आकर्षक करू शकें गावा ।

हाची रस्यबोध बरवा । मिळे याठायी'

लोक उपदेश पाहत नाही तर वर्तन पाहतात. सेवा  
णाऱ्यापुढे लोकही नतमस्तक होतात. आज पर्यंत सेवा  
णारेच थोर पुरुष म्हणून गौरवल्या गेले. सेवेच्या नावाखाली  
रगरीबांना राबवून उपाशी मारले यावरून प्राण्यांचा सुड  
न केलेली सेवा काहीच कामाची नाही. आपण राबावे आणि  
दूसऱ्यास मिळावे, यास सेवा म्हणता येणार नाही.  
रवशांतीच्या नावाखाली यज्ञ करतात आणि त्याचे सेवकच  
माचा फायदा घेतात. सेवेमुळे सहकार्य वाढावे दुसऱ्याची गरज  
गवावी त्यात लोभ नसावे. जनाजिवनाची शांती बिघडेल  
शी प्रतिष्ठेपुरती स्वार्थी सेवा नसावी.

'सुर्य सकळांची सेवा करी ।

बदला न मागे तिळमरी ।

असे उदाहरण देतात. सेवा केवळ प्रसिद्धीसाठी नसावी.  
आपले सेवेमुळे लोक आनंदी, समाधानी झाले तेच आपले  
बक्षिस असे मानावे. दूसऱ्याच्या आनंदात आपला आनंद  
मानतो, तो खरा सेवक ज्यात दुर्गुण नसावे राहण्यात,  
बोलण्यात आदर्श दिसावा. खरा सेवक मिळाल्यास गाव सुखी  
होईल, आणि लोकसेवेचे पुण्यही मिळेल.

निवडणूका गावाच्या नाशास कारणीभूत ठरतात.  
मतदानात शंका, तिरस्कार, हेके, कपटे अशी विनाशक बाजू  
फोफावतात. पहा जातीयेतेच्या खाली निवडणूका लढवितात.  
हवी तशी व तेंवढी आश्वासने देतात. मेजवाण्या देतात, दारु  
पाजतात आणि गुंड लोक निवडून येतात. अशुद्ध, अमद्र  
मार्गाचा अवलंब करून निवडून येणाऱ्याने गांव आदर्श बनणार  
नाही. सुखाचा अभाव असेल आणि मंगलमय वातावरण नसेल,  
त्यामुळे सज्जन व्यथित होतात. आणि सज्जन निराश झाले  
की, दृष्टता फोफावते.

निर्धाराने लोकांच्या सहाय्याने आपले काम करावे,  
प्रतिकूल परिस्थितीवर मात करण्याचा प्रयत्न करावा.

'विरोध येता बसावे घरात ।

ऐसे नोव्हे सेवेचे व्रत ।

गंगा घाबरती पाहणी पर्वता तरी ।

सागरा न मिळती ।'

गावाची सेवा म्हणजे खरी ईश्वरसेवा, सज्जनांच्या  
सौजन्याने सामार्थ्यप्राप्ती झाली तर दुर्जनांमध्ये आपोआपच दूर  
होते. सज्जनांच्या सहयोगाद्वारे आणि सत्याच्या अधिष्ठानावर  
आदर्श ग्रामराज्याचा पाया घालावा. संघटनेद्वारे ग्रामोन्नतीचा  
प्रयत्न करावा.

सेवा करून गावाच्या उन्नतीसाठी कमेटी बसवीली तरी  
पण पुढाऱ्यांसाठी निवडणूका होतात. आणि वातावरण पून्हा  
दूषित होते.

'गढूळ पाणी ढवळो जाता ।

घाणची ऊफाळोनी ये हाता ।

जेथे सेवेची नाही आलियता ।

तेथे गोंधळ सहजिची ।

सेवाभावी लोकांनी संघटनशक्ती निर्माण करावी.  
सज्जनांचे मंडळ स्थापन करावे. आणि सेवाभावा व्यक्तीला  
प्रमुख म्हणून निवडून दिल्यावर गावाची सुधारणा निश्चीतच  
आहे. पुढारी निवडण्यात निर्भयता असावी. इमानदार,



## राष्ट्रसंतांचा सांगितिक दृष्टीकोण

प्रा. प्रतिभा चं. पवित्रकार  
संगीत विभाग प्रमुख

श्री.शिवाजी कला, वाणिज्य व विज्ञान महा., अकोट.

महाराष्ट्र ही संतांची भूमी आहे. असे म्हटल्यास चुक होणार नाही. कारण नामदेव, ज्ञानेश्वर, एकनाथ तुकाराम, रामदास या अनेक संतानी या मायभूमीत जन्म घेतला व भागवत धर्माचे मंदिर उभारून जनजागृती केली. बुडत सेजन पाहावे ना डोळा म्हणून कळवळा येत असे या वृत्तीने सर्व संतानी समाज जागृतीसाठी प्रयत्न केले. त्यात काही निवृत्तीपर काही प्रवृत्तीवर संत होते.

ब्रिटीशांनी भारत व्यापला त्याच्या गुलामगिरीत भारताची भयानक अवस्था झाली. देशात गरिबी, अंधश्रद्धा, लाचारी, अज्ञान भ्रष्टाचारीवृत्ती इत्यादी अनेक रोगांनी देश किडला. त्या जगाला जागृत करण्यासाठी अमरावती जिल्ह्यात दोन प्रवृत्तीवर संत जन्माला आले एक म्हणजे राष्ट्रसंत तुकडोजी महाराज व दुसरे श्री. संत गाडगे बाबा! महाराजांचा जन्म अमरावती जिल्ह्यातील यावली नामक लहानशा खेड्यात, झोपडीसारख्या घरात अशिक्षित कुटुंबात दि.30 एप्रिल 1909 रोजी गुरुवारी झाला. जातीने भाट पण बंडोजी ब्रम्हभट हे शिवण काम करीत आई मंजूळाबाई दळण कांडण करी.

महाराजांचे जन्मांव माणिक होते. बाळपणीचं त्यांना माधानचे जन्मांध मधुराभक्त संतश्रेष्ठ गुलाबराव महाराज यांनी बालपणी आर्शिवाद दिला. वडिलांचे मातापिता पंढरीचे तर आईचे मातापिता माहुरचे जन्मभर वारकरी होते. मामा वरखेडच्या आडकोजी महाराजांच्या सेवेत तर आई संतभजने गाण्यात मग्न होत. लहानपणी महाराज हूड होते. परंतु त्यांना लहानपणीच ईश्वर दर्शनाची तळमळ दिसून येई. मुलांप्रमाणे इतर खेळ न करता ते एकतारी व खंजिरीवर भजने म्हणत. त्यांच्या खंजिरीत कृष्णाच्या बासरीचे सामर्थ्य होते. चांदूर बाजार येथे राहत असतांना भजनाचे बाळकडू त्यांना मिळाले. लाखो लोकांना आकर्षित करणाऱ्या राष्ट्रसंताला गायनाचा पहिला धडा भारतीबुवा नी शिकविला. प्राथमिक शिक्षण कसे-बसे पूर्ण केले असले तरी त्यांचे मन शिवमंदिरात व बाहेर ध्यान पुजनात रमत असे. वडीलांना ते पसंत नसे व नेहमी रागवत. लोकही त्रास देत म्हणून ते वरखेडला मामाकडे गेले आणि तेथेच ते आडकोजी महाराजांचे भक्त झाले.

1921 साली आडकोजी महाराज समाधीस्त झाले आणि महाराज अस्वस्थ झाले आणि त्याच स्थितीत ते पंढरीला गेले. घरी परत येऊन त्यांनी शिवणकाम करून आई वडीलांची सेवा केली. परंतु वैराग्यभावना दृढ झाली आणि 1923 साली रामटेकला गुपचूप निघून गेले. तेथेच त्यांना एक महायोगी पुरुष जंगलात मिळाला व त्यांच्याच गुहेत योगाभ्यास सुरू केला.

तेथून ते वनोवनी फिरत चिमूरकडील वनात गेले नेरी येथे भोज पत्रावरील एक जुना वेदांतग्रथ त्यांनी वाचला. व फकीरा बरोबर मंत्रतंत्र साधनाचाही अभ्यास केला. तेथेच त्यांना एका व्यक्तीने विश पाजले पण ते आजारी होऊन वाचले त्याची भक्ती पाहून व व्यक्तीमत्त्वाने प्रभावित होवून व भजने ऐकुन लोकानीच त्यांना देव बाबा ही पदवी दिली. त्यांचे भजनाचे कार्यक्रम गावोगावी होऊ लागले. 1925 साली त्यांना पुन्हा विदर्भात आणले. त्यावेळी त्यांनी अनेक संतांच्या व तीर्थांच्या दर्शनासाठी दौरा काढला. व समाजाचे निरीक्षण केले व त्यांनी जुन्या साधनातून नवे विचार ओतले.

1930 च्या सत्याग्रही शिबीरातून राष्ट्रीय भजने गाजविली 1934 च्या चिमूर चार्तुमास व 1935 चा सालबर्डीचा अपुर्व यज्ञ त्यांनी महाराजांचे महान व्यक्तीमत्व लोकांपुढे आले. 1936 साली महात्मा गांधींनी त्यांना महिनाभर आग्रहाने स्वतःजवळ ठेवून घेतले.

राष्ट्रसंतानी अंधश्रद्धा निर्मूलन व जातीभेदाच्या निर्मूलनासाठी भजनाच्या आणि किर्तनाचा प्रामुख्याने प्रभावी वापर केला. गावोगावी सामुदायिक प्रार्थना करण्याकरिता गुरुदेव मंडळाची स्थापना केली. आत्मासंयमाचे विचार त्यांनी ग्रामगिता या काव्यातून मांडले. त्यांनी मराठी व हिंदी भाषेमध्ये अनेक काव्यरचना (भजने) लिहली व गायली सुद्धा. खंजिरी भजनाच्या माध्यमातून त्यांनी देशप्रेम राष्ट्रभक्ती जागृत करून भारताच्या स्वातंत्र्य लढयाकरिता फार मोठे योगदान दिलेले आहे.

1935 साली मोझरी येथे ग्रंथ प्रकाशन व धर्म सेवाश्रम स्थापन झाले. अनेक शिबिरे घेतली व त्यातून तेजस्वी तरुण संघटना रुपास आली. सन 1942 च्या भारत छोडो आंदोलना दरम्यान गावोगावचे उपासक तुरुंगांत गेले व त्यासोबतच महाराजांनाही काहीकाळ अटक झाली होती. चिमूर आणि आश्टी येथील स्वातंत्र्य संग्राम तर प्रसिध्दच आहे. तेथील अब काहे को धूम मचाते हो। दुखावके भारत सारे। आते है नाथ हमारे, हे त्यांनी रचलेले पद त्या काळात स्वतंत्र लढण्यासाठी स्फुर्तिगित ठरले होते. त्याप्रमाणे आजादी के जंगमे आबादी के रंगमे। वीरोंको चेतायेंगे। हटकयेंगे, सैतान है। असा जोश भरून तरुणांची मन भरत होते स्फुर्ति देत होते महाराज संत नव्हंते, स्फुर्तिदाते होते तसेच, मेरा प्यारा भारत देश, आओ सुंदर देश बनाये या सारख्या भजनांच्या माध्यमातून त्यांचा जाज्वल्य देशाभिमान प्रामुख्याने प्रकट होतो.

सेवाग्राम आश्रमात महात्मा गांधीचे मौन व्रत होते. बापु





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## **A STUDY OF GROUND WATER QUALITY OF AKOLA ROAD WARD IN MUNICIPAL AREA OF AKOT DIST. AKOLA MAHARASHTRA**

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### **ABSTRACT**

Ground water is the main source of water supply for drinking, irrigation and for industrial purpose. Five sampling points i.e. Shivaji colony, Gurudeo colony, Krushnarpan colony, Gokul colony, and Shri colony at different depths were selected for the study in Akola road ward in Municipal area of Akot. The parameters studied were temperature, pH, chloride, total hardness, total alkalinity, turbidity and TDS.

**Key words:** Ground water quality, Municipal area.

### **INTRODUCTION**

Water plays an essential role in human life. According to statistics of WHO reports, approximately 36% of urban and 65% of rural area of India are without access to safe drinking water<sup>1</sup>. Fresh water is one of the most important resources for the survival of all the living beings. It is even more important for the human being as they depend upon it for food production, industrial and waste disposal, as well as cultural requirements<sup>2</sup>. Human and ecological use of ground water depends upon water quality. Human alteration of the landscape has an extensive influence on watershed hydrology<sup>3</sup>. Ground water play a vital role in human life. The consequences of urbanization and industrialization leads to spoiling water for agricultural purposes. Ground water is explored in rural area, especially in those areas, where other sources of water like dam and river or a canal is not available. During last decade, this has been observed that ground water gets polluted drastically because of increased human activities. Consequently, number of cases of water borne diseases have

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## RESULTS AND DISCUSSION

The water from the study area had no colour, and odour. Taste of the water of the water sample in most of the locations was pleasant in taste. The results of the chemical analysis of water in the present study are given in Table 1, so it is necessary to make a comparison of water quality with WHO standards. These parameters are shown in Table 2. The pH of water indicates the degree of deterioration of water quality. The desirable pH range necessary for drinking water is from 7.0 to 8.5. The pH value of water sample in the study area ranged from 7.1 to 9.5. Thus, it shows that pH of water sample was slightly alkaline in this area.

**Table 1: Properties of ground water**

S. No.	Properties	Shivaji colony	Gurudeo colony	Krushnarpan colony	Gokul colony	Shri colony
1	Depth (meters)	54	64	55	60	53
2	Temperature (°C)	31	31	31	31	31
3	pH value	7.8	7.1	9.5	8.5	8.3
4	Chloride (mg/L)	349	350	384	503	475
5	Sulphate (mg/L)	21	23	34	60	58
6	Total hardness (mg/L)	342	402	245	475	385
7	Total alkalinity (mg/L)	465	398	300	590	321
8	Turbidity (NTU)	21	15	19	81	54
9	TDS (mg/L)	1243	1097	1055	1800	1254

The concentration of chloride in the sample was found to 349 to 503 mg/L. High chloride contents have toxic effect to plants, animal, and human beings. The concentration of sulphate was found to 21 to 60 mg/L.

Total hardness was found in the sample water in the range of 245 to 475 mg/L. The desirable limit for total alkalinity of ground water samples varied from 300 to 590 mg/L.

Turbidity is one of the common forms of pollution. This prevents growth of the aquatic plants by reducing rate of their photosynthesis. This creates problems in self purification of water.



Turbidity in the water sample was found between 19 to 81 NTU. The value of TDS was found in the sample water between 1055 to 1800 mg/L.

### CONCLUSION

Ground water is the only source for people in the study area, and the results of the chemical analyses of ground water indicate considerable variations in quality parameters of water. Most of the water samples do not comply with ICMR standards for drinking purpose. The water quality in the investigated area was found to be suitable for drinking only in few locations, while as out prior treatments. It must be noted that a regular chemical analysis must be done to ensure that the quality of water in this area is not contaminated. Research about new wells in the area is required in order to get additional water for the residents of this area.

### ACKNOWLEDGEMENT

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## **Regression Analysis Of Ground Water Quality Of Rural Areas Of Akot-City Using Physico – Chemical Parameters**

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**Abstract:-** Ground water is one of the most useful water sources. Water is second to oxygen as being essential for life. People can survive days, weeks, or even longer without food, but only about four days without water. Contamination of such water sources is a big problem creating health hazard. In this study Samples will be collected from different areas like College area, Krushnarpan colony, Gokul Nager, Sawra Manchanpur, Akot MIDC, Appaswami Colony, Shivaji square, and Jaystambha square of Akot City. In these study different parameters like PH, Temperature, Total Dissolved Solid, Alkalinity, Hardness, Suspended Solid, Dissolved Solid, Chloride, Turbidity, ions, and MPN, will be analyzed. After examination and testing of different Physico-Chemical and Biological parameters (using WHO and INDIAN STANDARDS), the suitability of ground water for drinking and domestic purposes, could be found.

**Keywords:** *Water quality; pH, conductivity; DO, BOD, COD, faecal coliform.*

### **I. INTRODUCTION**

Water is essential in human life. The main reason of water contamination is urbanization and industrialization. In rural areas where the water sources like dam, canal, or river is not available, ground water is explored for agricultural purposes. As per current analysis, this is observed that the ground water get polluted drastically because of increased human activities, because of which, water borne diseases has been seen which a cause of health problems a lot. Therefore, basic concentration is needed to monitor the quality of water as well as to find out various sources which increased ground water pollution. This paper basically focused to examine the water quality of various potable water sources viz. ground water at Akot City. During experimentation, Physico and Chemical parameters of water will be tested to get good quality of water.

### **II. LITERATURE REVIEW**

Sandeep K. Pandey and Shweta Tiwari<sup>1</sup> have carried out, Physico-chemical analysis of ground water of selected area of Ghazipur city, In this study they have analyzed different parameters like pH, T.D.S., D.O. and CO<sub>2</sub> etc. A comparison with ICMR standard shows that the water is nearly suitable for drinking purpose. M.R.Mahananda, B.P.Mohanty & N.R. Behera<sup>2</sup> have carried out, physico-chemical analysis of surface and ground water of Bargarh district, Orissa, India. The present work has been conducted by monitoring two types of ground water i.e. dug well water and bore well water of 10 wards of the town as well as 3 types of ponds, viz. temple pond, small community pond & large community pond of the town. In this study Various parameters like Temp, pH, TSS, and TDS, Alkalinity, DO, COD, Nitrate, Chloride, Sodium, Potassium, Phosphate, Fluoride, Total Coli forms. By observing the result it can be concluded that the water quality are below the pollution level for ground water, But in case of surface water, the water quality of small community pond are above the permissible limit. Arunabh Mishra and Vasishta Bhatt<sup>3</sup> have carried out, Physico-Chemical and Microbiological Analysis of Under Ground Water in V.V Nagar and Nearby Places of Anand District, Gujarat, India They have analyzed different parameters like pH, TDS, hardness, conductivity, dissolved oxygen and chemical oxygen Demand, MPN. It is conclude that the quality of water samples was acceptable according to physico-chemical analysis while as per Bacteriological standards, the water needs to be treated before using it in domestic purposes. Murhekar Gopalkrushna H.<sup>4</sup> have carried out, Assessment of Physico-Chemical Status of Ground Water Samples in Murtizapur city. In this study various parameters analyzed like, temperature, pH, TDS, turbidity, (DO), total alkalinity (TA), total hardness (TH), calcium (Ca<sup>++</sup>) magnesium (Mg<sup>++</sup>), sodium (Na<sup>+</sup>), potassium (K<sup>+</sup>), chloride (Cl<sup>-</sup>), fluoride (F<sup>-</sup>), nitrate, sulphate and phosphate Of Open Well and Bore well was determined. It was found that the ground water was contaminated at few sites Whereas at other site the water quality standards and the quality of water is good and it is fit for drinking purpose.<sup>5,6,7</sup> D. P. Gupta,



Sunitaa & J. P. Saharanb<sup>8</sup> have carried out, Physiochemical Analysis of Ground Water of Selected Area of Kaith City (Haryana)India. Ground water samples were collected from different locations. In this study various parameters analyzed like pH, Color , Odor , Hardness, Chloride, Alkalinity, TDS etc. and compare the results against drinking water quality standards laid by Indian Council of Medical Research (ICMR) and World Health Organization (WHO). It is found that some of the water samples are non-potable for human being. And after that they conclude the quality of ground water is suitable for drinking purposes or not.

### III. IMPURITIES OF GROUND WATER

Ground water may get contaminated by organic and inorganic chemicals, radioactive material and micro-organisms. Although only a small portion of the Nation's total ground water resource is thought to be contaminated, but the potential effect of this contamination is significant. Contamination found in ground water is associated with adverse social, environmental and economical impact. During experimentation, Turbidity, Total solids and suspended solids, Organic Matter, Hardness, Alkalinity, Sulfate, Fluoride, Iron, Nitrate and Nitrite, Sodium, Calcium, Dissolved Oxygen, Biochemical Oxygen Demand, Chemical Oxygen Demand.

### IV. OBJECTIVE OF THE PRESENT WORK

- To carry out the physico-chemical & biological characterization of water samples collected from different areas of Akot City.
- Study of water quality of analyzed water samples.
- To know the suitability of Ground water as a potable water

### V. METHODOLOGY TO BE ADOPTED

- Environmental laboratory inside the Chemistry Department is identified for this work.
- Sterilized and disinfected sample bottle will be used for sampling purpose.
- Analysis of various parameters will be carried out in the laboratory as per referred literature.
- Water quality parameters of collected water sample will be compared with the standard values of water parameter.
- Analysis of water sample will be done to investigate its utility in various sectors

### VI. RESULTS AND OBSERVATION

Fig. 1 Analysis of Temperature

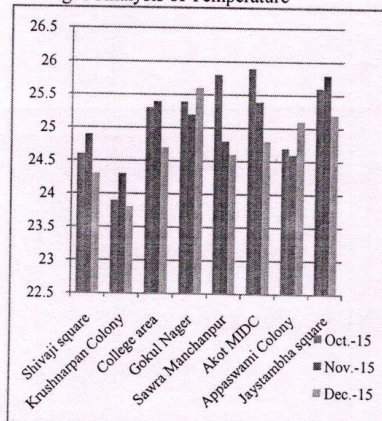


Fig. 2 Analysis of Dissolved Oxygen

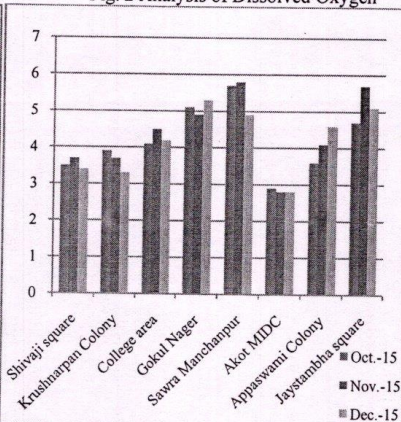


Fig. 3 Analysis of Total Dissolved Solids

Fig. 4 Analysis of pH



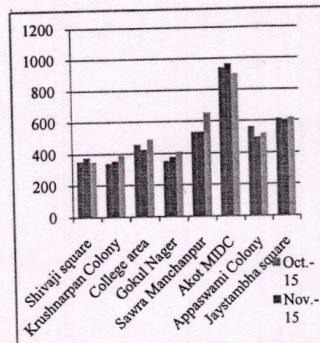


Fig. 5 Analysis of Turbidity

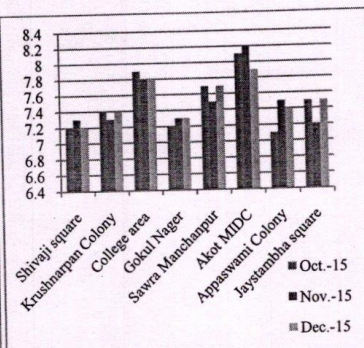
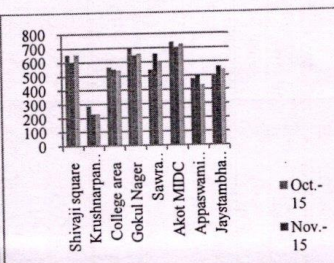
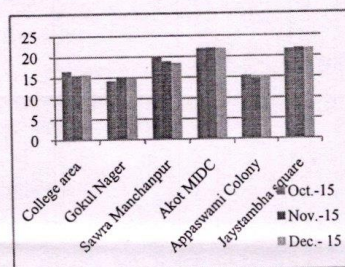


Fig. 6 Analysis of Total Hardness



## VII. DISCUSSIONS

1. Temperature varies in the range of 24.3 to 25.9°C. Maximum temperature is found in Shivaji Square due to presence of Effluents.
2. The PH Values varies from 7.3 TO 8.2. The Desirable limit of Indian Standard is 6.5 to 8.5. It is observed that the values of PH are in the Desirable limit.
3. Dissolved Oxygen ranges from 2.8 to 5.8 mg/lit, D.O. indicating the pure symptoms.
4. The values of Total Dissolved Solid range in between 340 to 940 mg/lit, and all the values are in Desirable limit of Indian Standard, Because of high Dissolved Salts of Ca and Mg and it requires cation and anion analysis.
5. The value of Turbidity varies from 4 to 22 NTU. It is observed that in most of the areas turbidity is above the Permissible limit of I.S. and it is due to Colloidal and extremely fine dispersion.
6. Alkalinity ranges from 264 to 432 mg/lit. All the values of Alkalinity are in the Permissible limit of I.S. Alkalinity is the cause of Carbonate and Bi-carbonate.
7. The value of Chloride ranges from 17.5 to 222 mg/lit. It is observed that the all values of Chloride are below the Desirable limit I.S.
8. Calcium values are ranges between 40.1 to 165.1 mg/lit and it is found that the all values are in the Permissible limit of I.S.
9. The value of Magnesium varies from 16.5 to 118.6 mg/lit. It is observed that the all values of Magnesium are above the Desirable limit of I.S. and Magnesium is directly related to hardness.
10. Total Hardness ranges between 230 to 740 mg/lit, maximum values of Total Hardness are below Permissible limit of I.S. Except in Akot MIDC area the values of Total Hardness are above the Permissible limit of I.S. From observation it is concluded that this area falls in hard water category, it means it contains Calcium & Magnesium ions.
11. The minimum numbers of Coliforms is found to be 9/100 ml in Krushnarpan colony area and maximum in Jaystambha Square from human beings and other homeotherms.



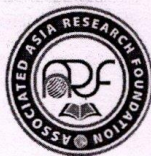
### CONCLUSION

During study, samples were taken from different areas of Akot city such as Krushnarpan colony, Gokul Nager, Sawra Manchanpur, Akot MIDC, Appaswami Colony, Shivaji square, and Jaystambha square of Akot City. Based on different parameter like PH, Temperature, Total Dissolved Solid, Alkalinity, Hardness, Suspended Solid, Dissolved Solid, Chloride, Turbidity, ions, and analysis has been carried out. The parameter analysis is discussed above in detail.

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**SYNTHESIS AND ANTIMICROBIAL ACTIVITIES OF 2-FURYLIDENE-5-CHLORO-7- SUBSTITUTED COUMARAN-3-ONE FROM 2, 3, 5 SUBSTITUTED-B-(2' FURYL) ACRYLOPHENONE**

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**ABSTRACT**

2 hydroxy substituted chalcone (I a-d) was dissolved in DMSO and mercuric acetate was added to it. The reaction mixture was refluxed for 2-3 hours and then diluted with water. The solid separated was crystallized from rectified spirit to give coumarone 3-one i.e. aurone (II a-d). The structural elucidation of compound were done on the basis of analytical and spectral data.

**Keywords:** synthesis, furylidene coumarone 3-one, mercuric acetate, acrylophenone, antimicrobial activity.

**INTRODUCTION**

Presence of 6 position in chalcone gives aurones in AFQ reaction instated of flavonol<sup>1</sup>. Chalcone dibromide on alkali treatment gives flavone<sup>2</sup>. However if chalcone dibromide is kept in cold ethanol for 24 hours & then treated with alkali only aurones are obtained<sup>3,4</sup>. We come across on interesting reaction of mercuric acetate in DMSO on chalcone. The cyclization of chalcones have been reported by early workers<sup>5</sup>. Mercuric acetate has been used in various synthesis specially in dehydrogenation of ergosterol and vitamin D, acetoxylation of olefins and ketones, oxidation of tertiary amine to enamines, as catalyst in vinyl ester interchange and bromination, formation of mercurated aromatic compounds and acylation<sup>6</sup>. While DMSO as a well known solvent for elimination reaction<sup>7,8</sup>. Flavones react with bromine in acetic acid in presence of mercuric acetate as a catalyst to give 3-bromo



flavones<sup>9</sup>. 2-hydroxy chalcone in acetic acid react with mercuric acetate gave aurone<sup>10</sup>. Mercuric acetate-DMSO has been used for the synthesis of aurones<sup>11-13</sup>.

Hence it was interesting to prepare aurones from 2, 3, 5 substituted- $\beta$ -(2' furyl) acrylophenone. Aurones have been studied for their utilization in the synthesis of different heterocyclic compounds by O sullivan<sup>14</sup>. Chalcone was prepared by known method<sup>15</sup>.

## EXPERIMENTAL

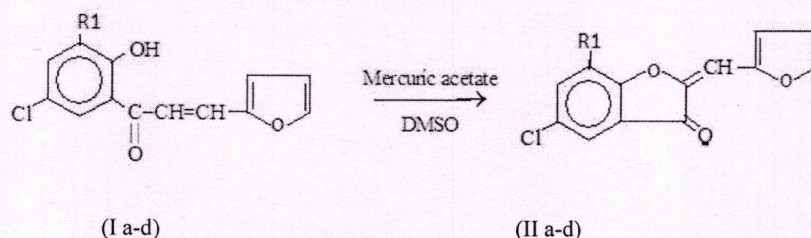
### Materials and methods

Melting points were determined in an open capillary tube and are uncorrected. IR spectra were recorded on Perkin-Elmer 557 spectrophotometer. PMR spectra were recorded in  $\text{CDCl}_3$  on a Bruker AC 300F spectrophotometer at 300MHz using TMS as an internal reference. Purity of the compounds was checked on silica gel-G coated plates.

Synthesis of 2-furylidene-5-chloro-7-nitro -coumaran-3-one:

2-Hydroxy-3-nitro-5-chloro- $\beta$ -(2'-furyl) acrylophenone (Ia) (0.01 mole) was dissolved in DMSO solution (20 ml), mercuric acetate (0.01 mole) was added, shake the reaction mixture well and refluxed for 3 hours, and allowed to cooled.

It was then diluted with ice-cold water, to obtain the crude product, washed several time with water so that smell of DMSO get disappeared, filtered, dried and crystallized from ethanol to get olive green color crystalline solid (IIa), m.p. 58°C, yield 69%.



## RESULT AND DISCUSSION

The structure of compound (II a) has been supported by chemical data, it is olive green color crystalline solid, m.p. 58°C showing negative ferric chloride test, indicating involvement



of phenolic hydroxyl group in cyclisation. Element analysis (%), found (calculated) C= 48.25 (48.29), H= 3.01 (3.02), N= 4.21 (4.20).

- IR spectra were recorded on Perkin-Elmer 557 spectrophotometer. 1704.5 (C=O stretching in cyclic ketone); 1647 (C=C stretching); 1589.3 (symmetrical aromatic –NO<sub>2</sub>); and 1341.9 (unsymmetrical aromatic –NO<sub>2</sub>); 1262 (stretching aromatic ring); 1205 (C-O-C stretching in five member cyclic ketone); 766.1 cm<sup>-1</sup> (C-Cl stretching).
- PMR spectra were recorded in CDCl<sub>3</sub> on a Bruker AC 300F spectrophotometer at 300MHz using TMS as an internal standard. 6.9-7.6  $\delta$  (m, 6H, aromatic-H); 7.8  $\delta$  (s, 1H, =CH).

These chemical, spectral data shows that compound (IIa) is 2-furylidene-5-chloro-7-nitro-coumaran-3-one.

Similarly all the compounds of the series were prepared in the same manner (II a – II d).

Table:-1

Synthesized compounds, M.P.'s and yields.

Comp. No.	R <sub>1</sub>	m. p. <sup>°c</sup>	% yield
II a	NO <sub>2</sub>	58	69
II b	H	158	60
II c	Br	140	65
II d	Cl	163	62

#### Antimicrobial activities

All the compounds have been screened for both antibacterial and antifungal activity using cup plate agar diffusion method<sup>21</sup> by measuring the inhibition zone in mm. The compounds were taken at a concentration of 1 mg/mL using dimethyl sulphoxide as solvent. Amikacin (100 ug/mL) was used as a standard for antibacterial and *fluconazole* (100 ug/mL) as a standard for antifungal activity. The compounds were screened for antibacterial activity against *Escherichia coli*, *staphylococcus aureus*, *proteus vulgaris* and *salmonellae typhi* in nutrient agar medium and for antifungal activity against *Candida guilliermondii* and *microsporum* potato dextrose agar medium

It has been observed that these compounds exhibited interesting microbial activities. II c and II d exhibited most significant activity against *salmonella* and *E.coli*, while II a, II b inhibited *S.aureus* and *P.vulgaris*.



Amongst the compounds tested for antifungal activity, compounds II a, II c and II d are active against *A. niger* and *C. guilliermondii*. Other compound II b exhibited low to moderate activity.

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## THERMODYNAMIC PARAMETERS OF GLUCOSE AND IT'S Cu (II) METAL COMPLEX BY ULTRASONIC TECHNIQUE

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**ABSTRACT:** Ultrasonic technique is one of the most useful technique, which is widely used for the study of molecular interactions between solute molecule and solvent media has got great importance in many fields of science including medicinal chemistry, industrial processes, and biochemistry. In recent years, much effort has been made to study ultrasonic properties of liquid mixtures. However, scanty work has been done for solutions of organic compounds. In the last few years, our investigation groups have carried out some studies on acoustical properties of organic compounds in various solvents. By simply measuring density of liquid and its corresponding ultrasonic velocity, many parameters like adiabatic compressibility ( $\beta_s$ ), relative association ( $R_A$ ), specific acoustic impedance ( $Z$ ), free path length ( $L$ ), relaxation amplitude ( $\alpha/f^2$ ), relaxation time ( $\tau$ ), relative viscosity ( $\eta_r$ ) etc. can be determined. All these parameters focus the light on molecular behavior of liquid. Ultrasonic velocity has been found to be powerful tool in the study of interactions in liquid mixtures. The ultrasonic parameters are therefore, being extensively used to study molecular interactions in pure liquid and liquid mixtures.

**KEY WORDS:** Adiabatic compressibility, relative association, specific acoustic impedance.

### INTRODUCTION:

Now-a- days molecular interactions are mostly studied by ultrasonic interferometer [1-3]. It is also useful in understanding physico-chemical behavior of liquids. The structural arrangements are influenced by the shape of the molecules as well as by their mutual interactions. Effect of concentration and temperature on molecular interaction in the solution of drugs can be studied from acoustic and thermodynamic properties. Similar work was carried out from this laboratory [4-6].

Ultrasonic velocity gives properties of basic importance to sound velocity in molecular theory of liquid. Number of workers such as Satyawati [7], Ramchandra [8], Prakash and Shrivastava [9], Marks [10], Agrawal and Bhatnagar [11] made their contribution to ultrasonic study of electrolyte solution and discussed about the variation of ultrasonic velocity with ion concentration. In the present studies, the ultrasonic velocity and density in solutions of new glucose and their metal complex of Cu(II) have been measured and various acoustical parameters have been calculated in aqueous medium at room temperature.

### MATERIALS AND METHODS :

**Acoustical properties:** The computation of ultrasonic properties require the measurements of ultrasonic velocity ( $U$ ), viscosity ( $\eta$ ) and density ( $\rho$ ). The densities of pure solvent, their solution of ligand and their metal complex were measured by using a single capillary pycnometer, made of borosil glass having a bulb capacity of 10 ml. The ultrasonic velocity of pure solvent and their solutions of ligand and their metal complexes were measured by using single crystal variable path Ultrasonic Interferometer operating at 2 MHz. The accuracy of density and velocity are  $\pm 0.0001$  g/cm<sup>3</sup> and  $\pm 0.1$  % cm/sec respectively. Viscosity was measured with the help of calibrated Oswald's viscometer (coming made) at  $33 \pm 0.1$  °C. Uncertainties in the measured viscosities were within

$\pm 0.03\%$ . Viscosity data were analyzed using Jone's Dole equation and Vand's equation. All the measurements were carried out at room temperature. The uncertainty of temperature is  $\pm 0.1$  K. From the experimental data of density, viscosity and ultrasound velocity of pure solvent and solutions, various acoustical parameters were calculated using following standard equations reported earlier.

#### 1) ADIABATIC COMPRESSIBILITY ( $\beta_s$ )

From the ultrasonic velocity ( $U$ ) and density ( $d$ ) the isentropic compressibility can be calculated from the following equation.

$$\beta_s = 1/(U^2 d), \quad \beta^0_s = 1/(U_0^2 d_0)$$

#### 2) RELATIVE ASSOCIATION ( $R_A$ )

The relative association expressed in terms of density of solution ( $d_s$ ) and solvent ( $d_0$ ) and also ultrasonic velocity of solution ( $U_s$ ) and solvent ( $U_0$ ). The relative association calculated by the relation.

$$R_A = d/d_0 (U_0/U_s)^3$$

#### 3) SPECIFIC ACOUSTIC IMPEDENCE ( $Z$ )

It is also determine the solvation of solute. It is expressed in terms of ultrasonic velocity of solution and density of solution. It is given by the formula.

$$Z = U_s \cdot d_s$$

#### 4) RELATIVE VISCOSITY ( $\eta_r$ )

Relative viscosity ( $\eta_r$ ) of various amino acids have been determined from density measurement and viscometric measurement using relation,

$$\eta_r = d_s \cdot t_0 / d_0 \cdot t_s$$

**Oswald's Viscometer:** The Oswald's viscometer used for measuring viscosity by the above method. It is first thoroughly cleaned with chromic acid mixture and dried. The co-efficient of the solutions are determined with a Cannon-Fenske viscometer. It is a special kind of Oswald viscometer and the principle used is the same.

Relative viscosity of each solution is determined by following empirical formula.

$$\eta_r = \frac{d_s \times t_s}{d_w \times t_w}$$



## RESULTS AND DISCUSSION :

Table-Ultrasonic properties of glucose and their Metal complexes in DMSO solvent at 306K

Acoustic properties		Ultrasonic properties of glucose in water solvent at 308K			Ultrasonic properties of glucose & Fe(III) complexes in water solvent at 308K		
Sr. No.	Concentrations	0.001M	0.002M	0.003M	0.001M	0.002M	0.003M
1	Density (gm/cm <sup>3</sup> )	1.001	1.010	1.011	0.9761	0.9809	0.9809
2	Viscosity ( $\eta$ )(m/s)	0.7568	0.7577	0.7605	0.8059	0.8420	0.8575
3	Ultrasonic Velocity (U)	1.544	1.558	1.548	1.526	1.536	1.530
4	Relative Association (RA)	0.9939	0.9998	1.0007	0.9768	0.9718	0.9708
5	Adiabatic Compressibility ( $\beta_s$ )	4.2081	4.1608	4.2189	4.3721	4.3286	4.8689
6	Specific acoustic impedance (Z) (m/sec.gm/cm <sup>3</sup> )	1.5489	1.5735	1.5650	1.4988	1.5040	1.4960
7	Relative viscosity( $\eta$ r) (m/s)	0.9058	0.8785	0.9799	0.8915	1.0048	0.8478

In the present work, acoustic parameters such as, adiabatic compressibility ( $\beta_s$ ), relative association (RA), acoustic impedance (Z), and Relative viscosity( $\eta$  r) (m/s) have been calculated for glucose and its metal complexes at different concentrations. All these parameters are studied at room temperature and at different concentrations of solution.

The adiabatic compressibility of glucose solution is less than water this indicate there is a presence of solute solvent interaction decreases concentration in glucose solution.

The Relative association is the property of understanding the interaction between solute and solvent. Relative association value in case of glucose water increases with increase in concentration of glucose; this is due to the electrolytic interaction increases with the increasing concentration.

The specific acoustic impedance value are decreasing with decreasing concentration, this may be due to decrease in thickness of oppositely charged ionic atmosphere with then increases in concentration of glucose and water solution.

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## गोजी भोसलेचा नवस व शहा दुल्हा रहमान गाझीचा मकबरा

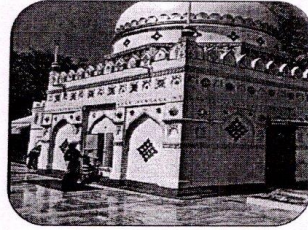
प्रशांत प्र. कोटे

इहास विभाग प्रमुख, श्री शिवाजी कला, वाणिज्य व विज्ञान महाविद्यालय, आकोट, जि. अकोला .

तावना :

मध्ययुगात वऱ्हाडात सर्वात महत्वाचे व प्रसिद्ध शहर अचलपूर अथवा चपूर होय. अचलपूरात सर्वात प्राचीन आणि प्रसिद्ध इमारत म्हणून दुर्ग रहमान गाझीचा मकबरा ओळखला जातो. तो बिच्यन नदीच्या कावर आहे. येथे दर वर्षी १० रबी उल अव्वल ला मोठ्या प्रमाणात उर्स त्रा) भरत असतो. त्या उर्समध्ये वऱ्हाडातील हजारो हिंदू व मुसलमान मोठ्या आनंदाने भाग घेत असतात.<sup>१</sup>

हा मकबरा अल्लाउद्दीन खिलजीने ज्यावेळी देवगिरीवर आक्रमण केले तेव्हा परत जात असतांना तो अचलपूरला थांबला. त्यावेळी त्याने मकबरा



ण्याचा आदेश आपल्या अधिकाऱ्यांना दिला. अल्लाउद्दीन खिलजीने प्रथम कबर बांधली<sup>२</sup> त्यानंतर दुरुस्ती होत हल्लीची कबर सफदरखा सेस्तातानी याने बहामनी बादशहा अल्लाउद्दीनेच्या आदेशाने हीजरी ७१२ मध्ये गाझी आणि त्याच्या आईच्या कबरेचा घुमट बांधला.<sup>३</sup> या मकबऱ्याला विटांच्या जाळ्या करून सुशोभित केले. या मजारमध्ये मोठ्या दरवाज्यातून आत गेल्यावर अनेक कबरी दिसून येतात. त्यात जुन्या महत्वाच्या गैना दफन केले आहे असे सांगितले जाते. त्यात एका मजारवर, मोठ्या प्रमाणात नक्षीकाम दिसते. या मऱ्याला हैद्राबादच्या 'आसफजही (निजाम)' राज्यकर्त्यांनी सुद्धा दग्याला आर्थिक मदत दिली<sup>४</sup> त्याचप्रमाणे चपूरचे नबाबांनीही काही दुरुस्ती केली<sup>५</sup> या मकबऱ्याचे खास वैशिष्ट्य म्हणजे मजारला बांधलेला परकोट तो नागपूरकर मुधोजी भोसले यांनी बांधला.

मुलीम धार्मिक ठिकाणांना आणि इमारतींना हिंदूंचा हातभार लागला आहे. 'राजश्री सेनाधुरंधर (मुधोजी ले) यांची स्वारी आलजपुरास गेली. म्हणून विनंती सेवेशी लिहलीच आहे. तेथे जाऊन रहमानशाबाबा यांचे [ घेऊन सलाबतखान यांचे घरी जाऊन चार घटका बसले.....'<sup>६</sup>

वरील दृष्टीकोनातून नागपूरकर भोसल्यांनी बजावलेली कामगिरी अतिशय महत्वाची मानली जाते. चपूरचे नबाब इस्मायलखान पन्ही व नागपूरचे मुधोजी भोसले यांचे मित्रत्वाचे संबंध होते आणि ते जगजाहीर होते. त्या निमित्ताने नागपूरकर मुधोजी भोसले अनेक वेळा एलिचपूरात येऊन नबाब इस्मायलखान पन्हीकडे असत. भोसल्यांची शहा दुल्हा रहमान गाजीविषयी असलेली श्रद्धा, यातूनच मुधोजी भोसलेच्या मनात शहा रहमान गाजीविषयी पूज्य भावना होती व त्यांची त्यावर श्रद्धा होती. तो एलिचपूरला येत असतांना नेहमी दुल्हा रहमान गाझीच्या दर्शनास जात होता. मुधोजी भोसले शहादुल्हा रहमानचा भक्त होता. त्याच्या दग्यातून घेऊन येत असतांनाच त्याच्यावर मारेकऱ्यांनी हल्ला केला होता. त्यात तो जखमी झाला होता.<sup>७</sup> या वेळी झालेल्या जखमा दुरुस्त होई पर्यंत तो नबाबाकडेच राहीला होता.

सेनासाहेब सुभा जानोजीच्या मृत्यूनंतर साबाजी व मुधोजीत सेनासाहेब सुभाच्या वाद वरून संघर्ष निर्माण त्यावेळी मुधोजी इ.स. १७७४ मध्ये एलिचपूर येथे होता. त्याने एलिचपूरचा प्रसिद्ध मुसलमान संत शहा



- । शहा दुल्हा रहमान गाजी मुळेच मुघोजीची इच्छा पुर्ण झाली. अशी जनमाणसात समजूत झाल्याने नमाणसांची शहा दुल्हा रहमान गाजीवर श्रद्धा निर्माण झाली.
- । म्हणूनच आजही शहा दुल्हा रहमान गाजीच्या उर्समध्ये वऱ्हाडातील हजारो हिंदू व मुसलमान लोक मोठ्या नंदाने भाग घेत असतात.
- । हा दर्गा मुस्लीमांना जेवढा पूज्य आहे तेवढाच हिंदूंनाही तो पूज्य आहे.

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अशा प्रकारे डॉ. बाबासाहेब आंबेडकरांनी आपल्या संपूर्ण आयुष्यात स्त्री यत्नांमध्ये कार्य करून स्त्रीयांना कायदेशिर समानता, न्याय, सामाजिक दर्जा व सन्मान प्राप्त करून देण्याचा प्रयत्न केला. बाबासाहेबांनी केलेल्या कार्याचा परिणाम आज इतिहासातच मोठ्या प्रमाणात झालेला दिसतो. भारतात लिंगाच्या आधारावर हजारी वर्ग स्त्रीयांचे अन्याय, अत्याचार झालेले व आजही काही प्रमाणात होताना दिसून येतात कारण आजही धार्मिक रूढी व प्रथांचा पाडा मानवी मानार दिसून येतो. जात पंचायती व छाप पंचायती या सारख्या पंचायतीमध्ये आजही स्त्रीयांचे अन्याय, अत्याचार होतच आहे. बलात्काराच्या, हुंडाबळीच्या घटना आजही घडताना आढळून येतात. परंतु त्याच सोबत या अन्याय, अत्याचारा विरुद्ध आवाज उठविणाऱ्या भारतात संघटनेने देखील आज निर्माण होत आहे. त्यामुळे आज बऱ्याच प्रमाणात चित्र बदलण्याचे दिसून येते.

भारतात आज स्त्रीया सर्वच क्षेत्रात आपणस पुरुषांपेक्षा देखील पुढेच दिसून येतात. आर्य असे कोणतेच क्षेत्र उरले नाही की, ज्या ठिकाणी स्त्रीया आढळून येत नव्हते. भारतीयका कालात केवळ शिक्षकी पेसा व कार्यालयीन क्षेत्रातच आढळून येणाऱ्या स्त्रीया आज राजकारण, समाजसेवा, बँकिंग, पोलीस प्रशासन, रेल्वे चालक, वैयक्तिक इंग्रज वैज्ञानिक, संशोधन, सैन्य या विविध क्षेत्रात आढळून येतात यावरून स्त्रीयांना संघी मिळाली की, त्या आपली भूमिका त्या त्या क्षेत्रात प्रभावीपणे पार पाडताना दिसून येतात. राष्ट्रपती, पंतप्रधान, राज्यपाल, मुख्यमंत्री, जिल्हा परिषद अध्यक्ष, मानवरत्न, आमदार, महापौर, सभापती, सरपंच अशी राजकीय पदे आज स्त्रीया संक्षेपण संभाळीत आहे. पुरुषांच्या बरोबरीने किंबहुना त्यांच्याही पुढे आज स्त्रीया दिसून येतात.

या सर्वांचे श्रेय डॉ. बाबासाहेब आंबेडकरांनी केलेल्या अथक परिश्रमाला अर्पित भारतीय संविधानात स्त्रीयां करीता केलेल्या समान संधीच्या तरतुदींनाच जाते. त्यामुळे स्त्री प्रधानता डॉ. बाबासाहेब आंबेडकरांचे योगदान अतुलनीय असेच आहे असे म्हणणे झाले. त्यामुळेच ते खऱ्या अर्थाने केवळ स्त्री उद्धारकच नाही तर

डॉ. बाबासाहेब आंबेडकर आणि स्त्री उत्थान  
स्त्रीयांचे खरे कैवरी ठरतात.

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EVALUATION OF ADSORPTION EFFICIENCY OF ACTIVATED CHARCOAL  
PREPARED FROM PHYLLANTHUS EMBLICA TREE BARK FOR RETRIEVAL  
OF CR (VI) METAL IONS FROM AQUEOUS SOLUTIONA. R. Somwanshi<sup>\*1</sup> & U. E. Chaudhari<sup>2</sup><sup>\*1</sup> Department of Chemistry, Shri Shivaji Arts, Commerce and Science College, Akot.<sup>2</sup> Department of Chemistry, Mahatma Fule Arts, Commerce and Sitaramji Chaudhari Science College,  
Warud

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## ABSTRACT

The studies on removal of Hexavalent Chromium were conducted using activated charcoal prepared from Phyllanthus Emblica tree bark (AC-PETB). Chromium (VI) adsorption from an aqueous solution has been studied experimentally using the batch adsorption method. The operating variables studied are pH, initial concentration, temperature, adsorbent dose, contact time. Adsorption isotherm like Langmuir and Freundlich model were studied. To enhance the adsorption capacity of activated carbon, it is loaded with Sodium lauroyl sarcosinate and 2-Acrylamido-2-methylpropane sulfonic acid and compared the adsorption capacity.

**Keywords:** Chromium (VI), Adsorption, Phyllanthus Emblica, Langmuir, Freundlich

## 1. INTRODUCTION

Chromium (VI) is one such toxic pollutant due to its harmful and therefore studies are still being done for carcinogenic effects on human health, especially in its other alternative pre-treatment procedures [1-3]. Several processes have been suggested to remove heavy metals from wastewaters. These processes include chemical precipitation, ion exchange, cementation, coagulation and flocculation, complexation, biosorption, and membrane processes [4-5]. Most of these methods suffer from some drawbacks, such as high capital and operational cost or the disposal of the residual metal sludge, and are not suitable for small-scale industries. Adsorption is one of the most effective physical processes and has a great potential for the removal of dyes and heavy metal ions from wastewater [6]. Activated carbons, with their high surface area, micro porous character and chemical nature of their surface, have made them potential adsorbents for the removal of heavy metals from industrial wastewater [7-8].

In most cases, one-step chemically surface activation is a method of choice by researchers in this area to activate the carbonaceous materials. Activated charcoal adsorbent can be selective, cheap and relatively inert and the high surface area along with the ability to chemically regenerate and reuse makes it very useful [9].

Taking these aspects into account, the present study was aimed to characterize the metal-binding ability of activated carbons derived from *Phyllanthus Emblica* tree bark.

## 2. MATERIALS AND METHOD

## Preparation of Solutions

2.94 gram of  $K_2Cr_2O_7$  dissolves in 1000 ml standard volumetric flask with deionised water. The concentration of Cr (VI) was analyzed by UV-Visible spectrophotometer (model-117) using 1, 5-diphenylcarbazide as the complexing agent at the wavelength of 540 nm. The Sodium lauroyl sarcosinate, 2-Acrylamido-2-methylpropane sulfonic acid (purchased from Merk), was used for surface modification of activated carbon. All







the solutions of these chelating agents are prepared in 0.01M concentration by dissolving it into 1000 mL volumetric flask with deionised distilled water.

#### Surface modification of GAC

Taking 200 ml solution of chelating agent (0.01M) and 0.5 gram of adsorbent (AC-PETB) in reagent bottle, shaken for 3 hours at 1000 rpm at room temperature, then dried in oven for surface modification. Activated charcoal loaded with Sodium lauroyl sarcosinate, 2-Acrylamido-2-methylpropane sulfonic acid designated as

#### AC-PETB-SLS and AC-PETB-AMPSA.

##### Batch study

The stock solutions of known concentration of Cr (VI) were diluted with double distilled water to obtain required standard solution. The dried amount of 0.5 gram of activated charcoal was taken in 250 ml reagent bottle and standard solution containing various concentration of Chromium (VI) was added and system is equilibrated by shaking the contents of the flask at room temperature. The adsorbent and adsorbate were separated by filtration and filtrate was determined by spectrophotometer at  $\lambda = 540$  nm against a reagent blank. The UV-Visible spectrophotometer systronic (model 117) was used to measure the concentration of Chromium (VI). Same experiments were carried out for loaded AC-PETB.

The amounts of percentage adsorption were computed as follows:

$$\% \text{ Adsorption} = (C_0 - C_e) / C_0 \times 100$$

Where, in equation  $C_0$  and  $C_e$  represented the initial and equilibrium concentration (mg/L).

##### Effect of pH

The effect of pH can be done experimentally by taking 0.5 gm of adsorbent with working volume of Cr (VI) 200 ml having constant initial metal ions concentration and the contact time of 3 hours with shaking speed 1000 rpm. The result indicates that maximum uptake capacity for Cr (VI) was found to be at pH 2 with AC-PETB,

AC-PETB-SLS and AC-PETB-AMPSA. The adsorption capacity of Chromium (VI) as a function of pH it was observed that percentage removal of Chromium (VI) is maximum of pH = 2 and then decrease with increase of pH shows in figure 1.

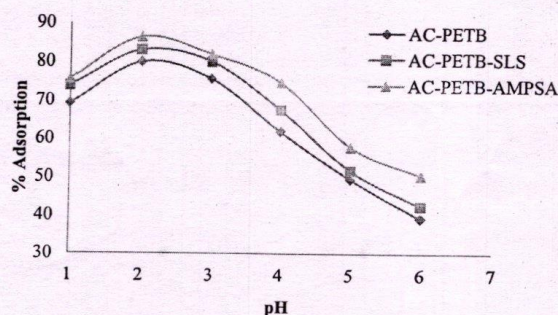


Figure Number 1: Effect of pH

##### Effect of Contact time

Study was carried out by taking 0.5 gm of adsorbent with working volume of Cr (VI) 200 ml with known concentration of metal ions. It was observed that initially rate of adsorption is rapid up to 160 min with shaking speed 1000 rpm and then there was no further change in equilibrium concentration. Equilibrium time was found







to be 300 minutes for this adsorption. The result indicates that maximum uptake capacity for Cr (VI) at pH 2 and at 180 minute.

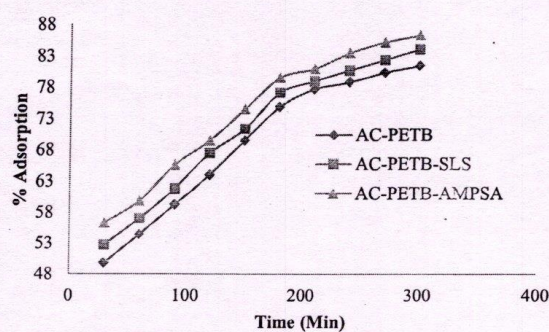


Figure Number 2: Effect of Contact Time

#### Effect of Adsorbent dose

The effect of varying the adsorbent dosage (AC-PETB, AC- PETB-SLS and AC- PETB-AMPSA) from 0.2–1 gram for adsorption of Cr (VI) from their aqueous solutions having known volume of initial concentration was studied at pH 2.0 It has been found that the percent removal of Cr (VI) increases with increase in adsorbent dose up to some extent, thereafter further increase adsorbent dose.

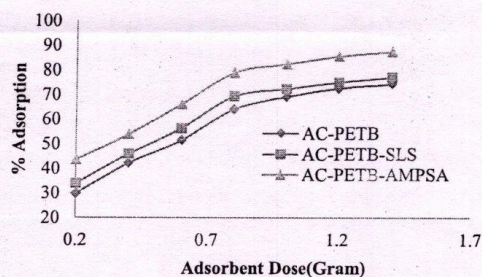


Figure Number 3: Effect of Adsorbent Dose

#### Effect of Initial Metal ions concentration

Study were carried out by varying initial metal ions concentration AC-PETB, AC-PETB-SLS and AC-PETB-AMPSA using adsorbent dose 0.5 gram at pH 2.0 having agitation speed 1000 rpm, contact time 3 hours. Result indicates that with increase in initial metal ions concentration percent of adsorption decreases.





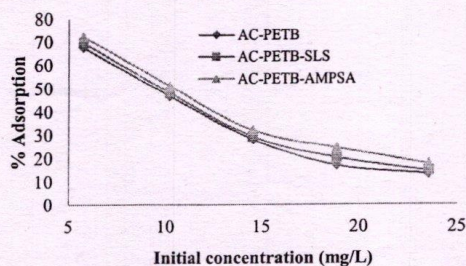


Figure Number 4: Effect of Initial metal ions concentration

**Effect of Temperature**

Effect of temperature was studied by varying the temperature from 30°C to 60°C with working volume 200 ml having known concentration. Study was carried out at pH 2.0 and at 1000 rpm with contact time 3 hours. As the temperature increases porosity increases and percent of adsorption increases up to certain extent and then remains constant this is due to chemisorptions process. In chemisorptions as the temperature increases adsorption increases up to certain extent and then decreases while in physisorption process as the temperature increases adsorption decreases. From the study it was observed that the phenomenon was chemisorptions.

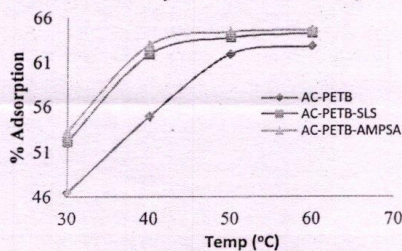


Figure Number 4: Effect of temperature

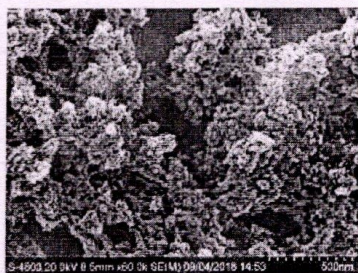
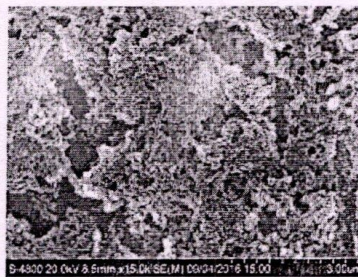
**Scanning Electron Microscopy**

Figure 4: A. Before metal ions adsorption



B. After Metal ions adsorption



**Isotherm Modelling:-**

**Langmuir Adsorption Isotherm:** - The Langmuir adsorption isotherm is shown in Table 1.  $Q_0$  values found to be comparable with commercial activated carbon. Value of  $R_L$  lies between 0 and 1 indicate the favourable adsorption. It indicates the applicability of Langmuir adsorption isotherm. The calculated value  $R^2$  confirms the applicability of Langmuir adsorption isotherm.

**Freundlich Adsorption isotherm:** - Freundlich plot for the adsorption of Chromium (VI) on AC-PETB, AC-PETB-SLS and AC-PETB-AMPSA is given in Table 1. It shows that the values of adsorption intensity  $1/n < 1$ , reveal the applicability of Freundlich adsorption.

Table 1: Adsorption Isotherm Constants

System	Langmuir Isotherm				Freundlich Isotherm		
	$Q_0$	$b$	$R_L$	$R^2$	$K_f$	$1/n$	$R^2$
AC-PETB-Cr(VI)	5.6967	0.0484	0.1123	0.996	2.1344	0.4743	0.995
AC-PETB-SLS-Cr(VI)	7.3843	0.0345	0.1134	0.998	2.6832	0.4178	0.996
AC-PETB-AMPSA-Cr(VI)	9.2632	0.0121	0.1140	0.999	3.3566	0.3789	0.999

**3. CONCLUSION**

- 1) Activated charcoal prepared from *Phyllanthus Emblica* tree bark (AC-PETB) was studied as good adsorbent for removal of Chromium (VI). The removal is found rapid in initial stage followed by slow adsorption up to saturation level. It also depend an initial concentration of adsorbate and agitating time.
- 2) The present work on adsorption process is in good agreement with Langmuir & Freundlich isotherm indicating monolayer adsorption process.
- 3) The result of adsorption process reveals that at pH = 2 Chromium (VI) uptake capacities are better.
- 4) Activated charcoal loaded with 2-Acrylamido-2-methylpropane sulfonic acid shows higher adsorption capacity than Sodium lauroyl sarcosinate and virgin activated carbon.
- 5) A result indicates that as the temperature, adsorption dose, contact time increases adsorption capacity increases while decreases with increase in initial metal ions concentration.

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## RESEARCH ARTICLE

## Investigation of peripheral blood smear with RBC morphology of Iron deficient anemia

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## ABSTRACT

Iron deficiency anemia is one of the world's most widespread health problems especially among children. Approximately 40% of children are anemic across various countries. Iron deficient anemia leads to weakness poor physical growth & compromised immune system decreasing the ability to fight infections and increasing morbidity and is also thought to impair cognitive performance and delay psychomotor development. Recent microeconomic estimates suggest that the impact on school participation and learning anemia could also be central to understanding the intergenerational transmission of poverty. Peripheral blood smear investigation revealed the shape of different blood cells from affected persons.

**Key words :** Iron Deficiency Anemia, Peripheral blood smear.

## INTRODUCTION

Although much is known about iron metabolism, the health consequences of iron deficiency continue to be a subject of re-search and debate. This is partly because in many regions of the world iron supplements are the standard of care for individuals with anaemia. Most trials of iron supplementation have measured haemoglobin concentration as the primary outcome. There is a relatively small body of clinical trials of iron repletion to humans with functional iron deficiency (i.e. iron deficiency severe enough to affect erythropoiesis) with pregnancy outcomes or mortality as primary objectives. There is surprisingly little evidence to either support or refute a causal link between iron deficiency and these important adverse health outcomes. As processes like this comparative risk assessment (CRA) bring to light the overall weakness of evidence either supporting or refuting the relationship, new research priorities may emerge.



## MATERIALS AND METHODS

- Disposable latex gloves (Use non-latex, e.g. nitrile or vinyl, if the employee and/or client has a latex allergy).
- 70% isopropyl alcohol
- Cotton balls or gauze
- Blood lancets for finger puncture (capable of making a puncture to the depth of 1.5 mm)
- E. Blood lancet designed for heel sticks on infants and premature babies, to a depth of less than 2.0 mm (e.g. BD Quikheel™ Lan-cet).
- F. Puncture resistant sharp's containers
- G. Band Aids (optional)
- H. Appropriate microcuvettes or tubes for micro sampling
- I. Disinfectant (freshly prepared 10% household bleach) for bench tops.

### Procedure:

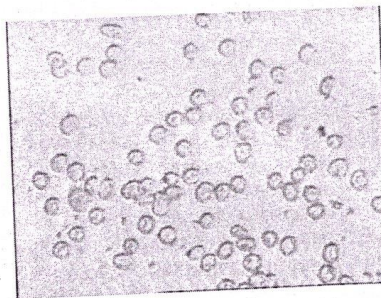
- 1) Small drop of blood (with or without anticoagulant) was place on new slide.
- 2) Push forward the spreader with a quick, smooth and single move-ment so as to make 2-3 cm long smears with convex edge.
- 3) Smear was dried quickly and stained the slides by using Leishman stain and methanol was used as a fixative.
- 4) Permanent slide was prepared by covering with cover slip.

## RESULTS AND DISCUSSION

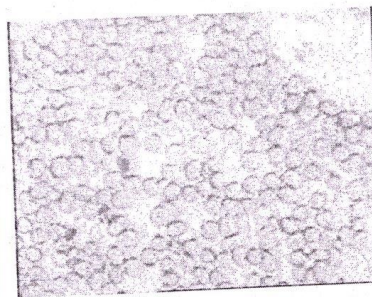
### Peripheral Blood Smear Examination

The examination starts with a macroscopic view to evaluate the quality of the smear based on overall appearance. The microscopic analysis begins on lower power (10X), primarily to assess cellular dis-tribution, staining quality, and to select an area where the RBCs are barely touching each other. This area is used to conduct a complete assessment of the cellular elements on higher magnification. All of the detailed analysis of the cellular elements on higher magnification. All of the detailed analysis of the cellular elements is performed using oil immersion. This final microscopic examination was perform at 50X and 100 X oil immersion and includes.

- A WBC differential
- The identification of abnormal and peculiar leukocytes.
- Assessment of RBC morphology
- The number and morphology of the platelets
- The identification of intra- and extra-cellular elements.
- Assessment of any organisms present.
- Following criteria was used to examine the peripheral blood smear of anemic patients.
- Size
- Shape
- Color
- Inclusions
- Peculiarities
- Relationships



**Sample 1:** Peripheral blood smear shows that fragmented red blood cell. Frag-mented cells are seen. Specific terms, depending on the shape, in-clude schistocyte, acanthocyte, spur cells, and burr cells.



**Sample 2:** This microphotograph depicts polychromasia. Referring to the blue-gray color of the red cell. Peripheral blood smear also showing micro-cytic, poikilocytosis including elliptical and elongated RBCs



# Isolation of Alkalophilic Bacteria from Lonar Crater and its Insecticidal Protein Producing Ability

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**Abstract** - Alkalophilic bacteria were isolated from water and sediment samples collected in rainy season, June 2010 from alkaline Lonar lake, India having pH -10.5. The total viable count (TVC) were found to be in the range of ( $10^3$  to  $10^4$  cfu ml<sup>-1</sup>) and ( $10^3$  to  $10^5$  cfu g<sup>-1</sup>) in water and sediment sample respectively. Five different bacterial strain were isolated using different enrichment media. These five isolated bacterial strain was further studied for Morphological characterization on the basis of the different characters such as colony colour, colony shape, colony surface, colony elevation and colony edge. These five isolates were further subjected to biochemical characterization and 16S rRNA sequencing. Biochemical characterization of these isolates showed that out of five isolates four isolates were gram positive and one was gram negative when observed under light microscopy. The taxonomic identification of the all bacterial isolates by 16S rRNA sequencing showed that four isolates were from *Bacillus* species and one isolate from *Halomonas* species. The BLAST results of these isolates are *Bacillus thurengensis* serovar finitimus, *Bacillus licheniformis*, *Bacillus cereus*, *Halomonas campisalis*, *Bacillus pseudofirmus*. These five alkalophilic bacteria were further studied for isolation and characterization of enzyme/protein having insecticidal potential.

**Keywords** - TVC, alkalophilic bacteria.

## I. INTRODUCTION

Alkalophiles, bacteria living in alkaline environment, have been have been flourishing everywhere on our planet. However, only a few scientists, have shown interests in this microbial domain and its application in various agricultural fields. They can thrive in neutral as well as alkaline environments because they can change their surrounding from neutral to alkaline pH value by producing basic compounds or by symbiosis. However, alkalophiles were thought to require only higher pH values for their growth. The term "Alkalophiles" is applied only to microorganism that grow optimally or very well at pH values above 9.0, but cannot grow or grow slowly at neutral pH values of 6.5 -7.0 (Horikoshi, 1992).

Alkalophilic microorganism are widely distributed throughout the world. There are three largest lake in the world where alkalophiles are found. Among them, Lonar

crater in Maharashtra is the third largest and meteoritic crater having alkaline pH. (Siddiqui 2008).

Takami et al (1997) isolated thousands of microbes from mud samples collected from the Mariana Trench. The microbial flora found at a depth of 10,897m was composed of actinomycetes, fungi, non extermophilic bacteria and various extermophilic bacteria such as alkaliphiles thermophiles and psychrophilic.

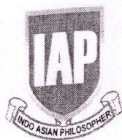
Lonar lake ecosystem has reported to contain rich bacterial diversity. The microorganism, alkalophilic bacteria, in this environment would therefore be unique.

Lonar crater is a classic beautiful bowl shaped depression in the basaltic flows of the Deccan traps in Southern India believed to be formed as a result of high velocity impact of huge meteor of extra terrestrial origin. Rightly rated as the third largest and oldest meteoritic crater is about 52000 year old crater size 1800-2000m in diameter, height is 20-30m, depth 150m and placid water spread areas 77.69 ha. The water of this lake are characterised by very high alkaline pH of 8 to 10.5. (Gopalkrishna, 2000)

Lonar Lake is rich in microbial diversity. Microbial ecology of Lonar Lake have been earlier studied by various scientific groups. Lonar Lake represent most stable naturally occurring alkaline environment on earth. This environments typically contain high concentration of sodium carbonate or complexes of salt. (Jhingram and Rao, 1912).

Joshi et al (2006) have found that, microorganisms like Arthorospira, Algae, Spirulina, Clostridium, Chlorella and various type of bacteria are abundant in water of this lake. Spirulina sp. growing in high alkaline area has been studied for various microbiological interaction and categories as alkalophiles. Despite the temperature optima for these bacteria is in mesophilic range but some isolate show thermotolerant character. Nitrogen fixing microorganism have also found in this lake which are all halophilic in nature and grow at pH 11.





## Amino Acids and Sugars from Floral Nectars of some Local Plants

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In addition to major constituent sugars, the floral nectar contains different amino acids and minerals. A qualitative study was carried out to detect kinds of sugars and amino acids from floral nectars of fifteen plants belonging to nine families by thin layer chromatography. As many as seven amino acids were detected from floral nectar of Erythrina plants. Nectar of two showed two amino acids. Only one amino acid was detected from nectar of three plants. Fructose was found more common among sugars. Two different unidentified amino acids were found to be present in nectars of plants studied.

### Introduction:

Pollination is successful in many plant species as a consequence of pollinators seeking nectar (Southwick, etal 1981). Nectar is an aqueous solution of sugars mainly sucrose, glucose and fructose. Amino acids and proteins are other common constituents (Baker and Baker 1983a). Nectar plays an important role in the plant animal interactions and its study provides clues to the understanding of the evolutionary relationships between plants and animals. Qualitative and quantitative investigations of the nectar constituents are important to understand i) reproductive biology of the plant, including mating patterns of the populations ii) the energetic, nutritional demands, behavior and movements of the pollinators and visitors and iii) the ecology and evolution of animal plant interactions. Nectar composition of a single plant species may vary due to concentration changes, pollinator activity and pollen contamination (Cruden and Herman, 1983)

We present here the floral nectar sugars and amino acids in fifteen species of local



Table: 2. Amino acids detected in nectars of plants

S.N.	Plant species	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14
1	<i>Citrus limon</i>											+		+	
2	<i>Murraya koenigii</i>							+							
3	<i>Murraya paniculata</i>	+			+									+	
4	<i>Butea monosperma</i>									+					
5	<i>Erythrina variegata</i>	+				+		+	+				+	+	+
6	<i>Mucuna pruriens</i>						+								
7	<i>Foeniculum vulgare</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	<i>Quisqualis indica</i>						+	+							
9	<i>Ipomoea hederifolia</i>											+			
10	<i>Bignonia unguis-cati</i>										+				
11	<i>Pyrostegia venusta</i>	+						+						+	
12	<i>Adhatoda zeylanica</i>											+		+	
13	<i>Peristrophe bicalyculata</i>							+							
14	<i>Vitex negundo</i>		+				+								
15	<i>Antigonon leptopus</i>			+										+	

A1 DL-Alanine

A7 Isoleucine

A13 unidentified -I

A2 L-Arginine monohydrochloride

A8 DL-Nor leucine

A14 unidentified -II

A3 L-Cysteine

A9 L-methionine

A4 L-Glutamic acid

A10 DL-Tryptophan

A5 L-Hydroxyproline

A11 L-Tyrosine

A6 L-Leucine

A12 DL Valine

Table: 3. Sugars detected from the nectars of species.

S.N	Name of Plant	Sucrose	Glucose	Fructose
1	<i>Citrus limon</i>	+	+	+
2	<i>Murraya koenigii</i>		+	+
3	<i>Murraya paniculata</i>	+		+
4	<i>Butea monosperma</i>		+	+
5	<i>Erythrina variegata</i>		+	+
6	<i>Mucuna pruriens</i>	+	+	+
7	<i>Foeniculum vulgare</i>		+	+
8	<i>Quisqualis indica</i>	+	+	+
9	<i>Ipomoea hederifolia</i>	+	+	+
10	<i>Bignonia unguis-cati</i>	+		+
11	<i>Pyrostegia venusta</i>	+	+	+
12	<i>Adhatoda zeylanica</i>		+	+
13	<i>Peristrophe bicalyculata</i>		+	+
14	<i>Vitex negundo</i>	+	+	+
15	<i>Antigonon leptopus</i>	+	+	+





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Original research article

# Influence of L-lysine on optical and dielectric traits of cadmium thiourea acetate complex crystal

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## ARTICLE INFO

## Keywords:

Crystal growth  
Optical studies  
Dielectric studies  
Nonlinear optics

## ABSTRACT

Crystals enduring strong thiourea-metal coordinated ligand demonstrate outstanding combination of dielectric and optical properties which are exclusively desirable for nonlinear optical (NLO) device applications and thus current study has been designed to investigate the semiorganic cadmium thiourea acetate (CTA) complex crystal. The pure and L-lysine (LL) influenced CTA complex crystals have been grown by commercial slow solvent evaporation technique at room temperature. The structural parameters of grown crystals have been experimentally determined by means of single crystal X-ray diffraction technique. The UV-vis spectral analysis has been employed within the wavelength range of 200–1100 nm to examine the effect of LL on optical transparency and extinction coefficient of CTA crystal. The enhancing effect of organic ligand of LL on second harmonic generation (SHG) efficiency of CTA complex crystal has been discussed and the SHG efficiency has been determined by employing the Kurtz-Perry powder test. The reliance of dielectric constant and dielectric loss of pure and LL influenced CTA crystal on temperature has been examined within the range of 35–90 °C. The compatibility of LL doped CTA crystal for distinct technological device applications have been explored.

## 1. Introduction

Since past many decades semiorganic nonlinear optical (NLO) thiourea metal complex crystals have been introduced to the scientific fraternity as an interesting material owing to their ability to inherit good structural, optical, physical, mechanical and thermal properties. Certainly the NLO crystal with such large diversity of appealing characteristics can be readily subjected to optoelectronics, photonics, frequency conversion and optical communication device applications [1–4]. The large variety of thiourea metal complex crystals have been designed, grown and investigated in later past [5]. It is attention grabbing fact that the transition metals (Zn and Cd) having  $d^{10}$  shell electrons favor excellent optical properties [6] hence out of the vast family of thiourea metal complex crystals the cadmium thiourea acetate (CTA) complex crystal holds strong research impetus. The fundamental properties of CTA crystal has been studied by several research groups by employing conventional and unidirectional growth techniques [7–10]. It is acknowledged that presence of additive effectively decorates the properties of host crystal [11,12], hence further progress in uplifting the properties of CTA crystal has been achieved by doping different organic and inorganic additives by many researchers. The influence of glycine, L-alanine and  $Mn^{2+}$  on properties of CTA crystal has been explored [13]. Recently our group comparatively investigated the impact of amino acid L-valine, L-cysteine and L-threonine on UV-vis, third order nonlinear optical and dielectric

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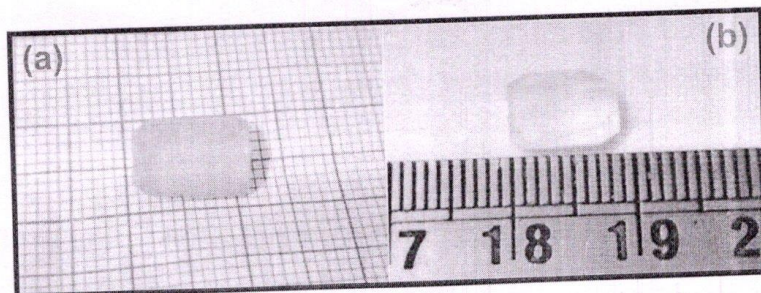


Fig. 1. Single crystal of (a) CTA and (b) LL-CTA.

properties of CTA crystal [14–16]. The literature analysis reveals that the amino acids possess Zwitter ions, wide H-bonding network, chiral centers and carboxyl group with abundance of pi bond [17] which are essential for tailoring the characteristic properties of host crystal and thus clarifies their importance for optimizing the properties of CTA crystal. In current investigation we propose the addition of chiral amino acid L-lysine (LL) in order to improve the overall performance of CTA crystal. The studies have been accomplished by employing different characterization techniques which include the single crystal X-ray diffraction, UV–vis, Kurtz-Perry test and dielectric analysis.

## 2. Experimental procedure

The Merck make AR grade cadmium acetate and thiourea was measured in 1:2 mol ratio as starting material and respectively dissolved in deionized water. This solution was allowed to stir and the cadmium thiourea acetate (CTA) complex was synthesized by slow solvent evaporation method. Further the saturated solution of CTA complex was prepared and 0.5 mol of L-lysine (LL) was gradually added and allowed to stir for five hours in order to facilitate the homogeneous mixing of LL. This LL influenced CTA (LL-CTA) solution was then filtered in clean rinsed beaker using the Whatman filter paper. The beaker containing the filtrate of LL-CTA solution was housed in the constant temperature water bath maintained at 36 °C. As the pure and LL-CTA solution progresses the process of slow evaporation the crystals were harvested within period of 3 weeks. The pure and LL-CTA crystal is shown in Fig. 1a and b respectively. It is noticeable that LL-CTA crystal express superior optical quality and morphology as compared to CTA crystal which confirms the constructive involvement of LL in optimization.

## 3. Results and discussion

### 3.1. Single crystal X-ray diffraction (XRD) analysis

The grown pure and LL-CTA single crystals were subjected to XRD analysis using the X-ray diffractometer (Model: Enraf Nonius CAD4). The crystallographic data of grown crystals have been experimentally determined at room temperature and systematically tabulated in Table 1. It is observed that the pure and LL-CTA crystal express orthorhombic crystal symmetry belonging to the space group  $P2_12_12_1$ . It is noteworthy that there is marginal difference in unit cell dimensions of pure and LL-CTA crystal which might have been expressed due to essential impact of LL on lattice site of host crystal CTA. The incorporation of LL however did not alter the structure and space group of CTA crystal.

### 3.2. Optical studies

The linear optical properties (transmittance and extinction coefficient) of pure and LL-CTA crystal has been evaluated within the wavelength range of 200–1100 nm using the spectrophotometer (Model: Shimadzu UV-1601). The optical transmittance in a crystal is attributed by permitted electron transitions, materials composition, molecular anisotropy and the defects (structural and crystalline)

Table 1  
Single crystal XRD data.

Structural parameter	CTA	LL-CTA
a (Å)	7.56	7.58
b (Å)	11.79	11.94
c (Å)	15.82	15.99
V (Å) <sup>3</sup>	1410.07	1447.17
Crystal system	Orthorhombic	Orthorhombic
Space group	$P2_12_12_1$	$P2_12_12_1$



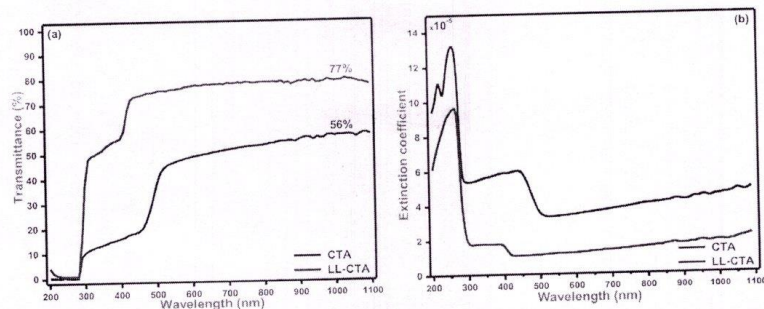


Fig. 2. (a) Transmittance spectrum (b) wavelength vs. extinction coefficient.

associated along the crystal plane [18–21]. The 1.8 mm thickness pure and LL-CTA crystals were scanned and the recorded transmittance spectrum is shown in Fig. 2a. It is observed that throughout the scanned spectral range the maximum transmittance of CTA crystal is 56% while that of LL-CTA crystal is 77%. The enhanced transmittance observed in the LL-CTA crystal might have been expressed due to less absorbing quality of dopant in addition incorporation of LL has reinforced much enhancement in optical quality of crystal. This confirms that the LL-CTA crystal possesses less scattering centers and defects (voids, striations, impurities, inclusions) which ultimately favor increase in intensity of optical transmittance of crystal [22,23]. The improvement in optical quality of LL-CTA crystal is also evident from physical appearance as shown in Fig. 1). The crystals with wide and high optical transmittance can act as window filter for transmission of blue and green harmonic signals of Nd:YAG laser [24]. The profile of extinction coefficient ( $K = \alpha\lambda/4\pi$ ) helps to evaluate the loss of optical signal in crystal medium thus the extinction coefficient of pure and LL-CTA crystals has been comparatively investigated in Fig. 3b. It reveals that the doping of LL significantly reduces the extinction coefficient of CTA crystal which might favor less loss of optical signal during transmission.

The crystal in which inversion symmetry is broken fosters the frequency doubling phenomenon which is the most essential quality to design the filters and second harmonic generation devices [25]. In current investigation the Kurtz-Perry powder technique [26] has been employed to determine the SHG efficiency of pure and LL-CTA crystal. The crystal samples were powdered to even grain size and sieved in the micro-capillary tube of uniform bore. Each capillary tube sieved with samples was placed at sample holder and multishot with the Gaussian beam of Nd:YAG laser (Q-switched mode, 1064 nm, 10 Hz, 8 ns). The output signal of the sample was collected through the array of photomultiplier tube and converted to electrical signal as displayed on oscilloscope. The output of KDP, CTA and LL-CTA crystal is found to be 5 mV, 6.1 mV and 10.9 mV respectively. This confirms that the LL-CTA crystal express superior SHG efficiency as compared to KDP and CTA crystal. The enhanced SHG efficiency in LL-CTA crystal might have been expressed due to (i) enhanced charge transfer over web of donor-pi-acceptor moieties (ii) the distortion of organic materials dwells ample sub-energy bands below the band gap which results to origin of more nonlinear response [27–29]. The SHG efficiency of LL-CTA crystal are compared in Table 2 which also indicate that the LL-CTA is competent crystal for designing optoelectronics and frequency convertor devices [30].

### 3.3. Dielectric studies

The dielectric properties of pure and LL-CTA crystal has been evaluated within temperature range of 35–90 °C using the HIOKI-3532 LCR cube meter. The crystals were polished to 2 mm thickness and respectively pasted by the silver coating to avoid loss of

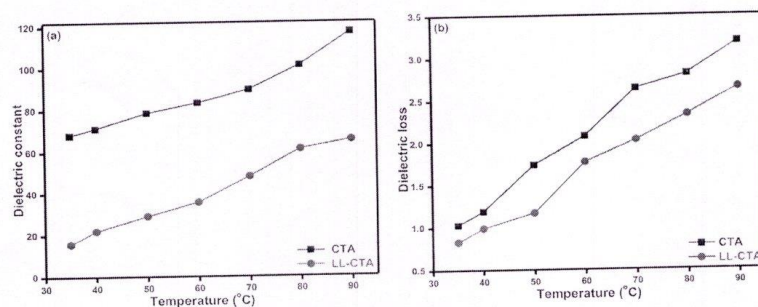


Fig. 3. Temperature dependent (a) dielectric constant (b) dielectric loss.



**Table 2**  
Comparison of SHG efficiency.

Dopant in CTA	SHG efficiency with reference to KDP	SHG efficiency with reference to CTA
L-cysteine [15]	1.68	1.35
L-threonine [16]	1.55	1.31
L-lysine <sup>a</sup>	2.18	1.78

<sup>a</sup> implicates present study.

experimental data. The dielectric constant in material is contributed due to polarization mechanism (electronic, ionic, dipolar, space charge) [31] which can be tuned by optimizing the external temperature and electric field applied to the crystal sample [32,33]. The dielectric constant of pure and LL-CTA crystal is graphically represented in Fig. 3a which confirms that the magnitude of dielectric constant rises with increase in temperature. The increasing profile of dielectric constant with temperature is basically evolved due to dominance of space charge polarization [34]. It is noticeable that the LL-CTA crystal exhibits less dielectric constant as compared to CTA crystal which is essentially required for designing microelectronic, photonics, THz generation and optoelectronic devices [35–37]. The material with lower dielectric constant consume less power and reduces the Rc delay [38] in addition it inculcate high SHG coefficient in material as established by Millers study [39] which is in sync with observed SHG results in LL-CTA crystal. The dielectric loss of grown crystals is shown in Fig. 3b. It reveals that the dielectric loss of CTA crystal significantly drops to low value in presence of LL. The dielectric loss is contributed due to defects (micro-macro cracks, vacancies, porosity, inclusions, grain boundaries, random crystal growth) [40–42]. The lower dielectric loss of LL-CTA crystal confirms that it possess less defects and superior optical quality [43].

#### 4. Conclusion

The optical quality LL-CTA crystal was successfully grown by slow solvent evaporation technique. The single crystal XRD analysis confirmed the orthorhombic structure and space group  $P2_12_12_1$ . The XRD analysis also confirmed the slight deviation in cell dimensions of LL-CTA crystal as compared to CTA crystal. The UV–vis studies employed within 200–1100 nm confirmed the uplifting impact of LL on optical parameters of CTA crystal. The optical transmittance of CTA and LL-CTA crystal is found to be 56% and 77% respectively. The extinction coefficient of CTA crystal showed significant decrease due to presence of LL. The SHG efficiency of LL-CTA crystal is 2.18 times that of KDP and 1.78 times higher than that of CTA crystal. The dielectric constant and dielectric loss of CTA crystal has been dropped to lower magnitude due to presence of amino acid LL. From above studies it is deduced that LL is the potential additive to optimize the linear-nonlinear optical and dielectric properties of CTA crystal. The LL-CTA crystal with impressive optical and dielectric properties might find suitable applications in designing distinct NLO devices.

#### Acknowledgment

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## RACIAL SEGREGATION AS AN UMBRELLA CAUSE OF UNCANNY AND UNCONTROLLED EXPLOITATION INTERACTED IN STRANGE FRUIT OF LILLIAN SMITH

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### ABSTRACT

Lillian Eugenia Smith was an internationally acclaimed white southern writer in areas of economic, racial, and sexual discrimination during the 1930s and 1940s. Smith boldly and persistently called for an end to racial segregation, which reflects her personal knowledge and experience with the young black and white civil rights activists of the 1950s and 1960s. She became an outstanding innovative known for her analysis of southern culture, especially in understanding of the effects of child-nurturing practices on adult racial and sexual relationships.

Smith's first novel *Strange Fruit* was translated into several languages. It is an interesting insightful exploration of the interrelationship of race, class, and gender in southern society, brought strong criticism from more moderate southerners. Smith's concerns extended beyond race relations to encompass all aspects of human relationships in the modern world. *Strange fruit* is a complex psychological novel about the inevitable destruction in a community when the reality and power of the irrational are unacknowledged in human life. It is a tragic story of Nonnie Anderson, an aware young black woman in the Georgia, and the young white man, Tracy Deen, by whom she is violated. It is a critique of isolation and discrimination.

**KEYWORDS:** Racial Segregation, Exploitation, Inhuman Violation etc.

### INTRODUCTION

Lillian Smith is a white novelist depicting the dark life of the Southern Blacks through her fictional art *Strange Fruit*. Both as a social critic and literary artist, Smith has touchingly tried to cement the interracial gaps with vigor words to acquaint the global reader with the harsh reality of manmade social inequalities. A sect of white writers in literatures in English has described the entire black skin people with bizarre and animosity of atmosphere. The historical perspective of one time Negro, now an African American people is filled with various human rights movements and agitation for the demand of equal status as an honored human alive with flesh and blood. Slavery, segregation, outcaste, backward, dark and so on is the terminology openly vested for the delineation of African American black race. The Harlem Renaissance was a literary, artistic, and intellectual movement that kindled a flame of new black cultural identity. Its essence was laid down in human struggle for equality.

Racial segregation is the separation of humans from other ethnic groups in daily life. It may apply to activities such as eating in a restaurant, drinking from a water fountain, using a public toilet, attending school, going to the movies, riding on a bus, or in the rental or purchase of a home or of hotel rooms. Racial separation is generally outlawed. Segregation may be maintained by means ranging from discrimination in hiring and in the rental and sale of housing to certain races to violence. In 1944, Smith published the bestselling novel *Strange Fruit* which dealt with the then prohibited and controversial theme of interracial romance. Smith sustained that the book had been a meeting or corresponding point with many southern blacks and liberal whites for years well aware of blacks' concerns.

Black people is a term used in certain countries, often in socially based systems of ethnicity, to describe persons who are supposed to be dark skinned compared to other given populations. It was earlier uttered as Negro; now in the connotation of stream of consciousness it is reshaped as African American or colored people. The American workplace is highly sexualized, mirroring a society where sexual bantering and flirtation are commonplace. The problem of sexual annoyance, however, goes far beyond such mutually agreeable contacts to situations where a woman is subjected to repeat and unwelcome sexual advances, derogatory statements based on her sex, or sexually demeaning gestures or acts. She is often made to feel degraded, ridiculed, or humiliated while he is working or threatened with adverse job consequences if she does not yield to sexual advances. The harassment takes an emotional, physical, and economic toll: women placed in this situation do not perform well on the job and often quit rather than continue to work in a threatening environment. Although sexual harassment has existed in the workplace since women entered the work force, it is only now coming into public view as a significant legal problem. The identification of sexual harassment as an important issue coincides with the rapid increase of women in the workforce and a related upsurge of feminist activities throughout the country. Women are feeling less powerless and are encouraging each other not to accept the harassment previously considered an unavoidable part of a woman's work life.

The novel *Strange Fruit* speaks about Nonnie Anderson, an exceptionally beautiful, bright, and talented, young, black young woman living in Maxwell, Georgia.

Her mother, now dead, insisted that all of her children go to college. Nonnie and her older sister, Bess, received degrees from Spelman College; her older brother, Ed, received a degree from Atlanta University. They went to college when most Maxwell residents, white or black, never even considered going to College. Ed, who has always hated Maxwell, moved to Washington, D.C. where he has a good job. He is back in Maxwell for a specific purpose to take Nonnie back with him to Washington, D.C. Even during his short visit, everything he experiences about Maxwell strengthens his hatred. Nonnie makes it very clear that she does not want to move away from Maxwell. When she tells Ed that she is happy as she is, Ed says "But how can you be, living like this? Country slums, that's what it is, taking orders all day long from crackers dirt"

"Nonnie smiled into his angry face. 'I've always been happy. Ed, all my life. You never were or not often you and Bess. You're ambitious. I'm not. Sometimes I don't think contented people ever are.'"

Nonnie does not want to leave Maxwell is a white fellow, Tracy Deen, with whom she is in love. When Nonnie was six, she was attacked by an older white boy. Tracy objected him, and has been Nonnie's hero onwards. Tracy and Nonnie have been having an affair and Nonnie become pregnant. Nonnie tells Tracy that she is happy to keep her baby. Tracy's family is quite prosperous. His father Tutweiler Dean is a dedicated physician. He also owns other businesses including the town's drug store. He would be happy to help Tracy get a start in life, but Tracy has always been a disappointment to his family and, especially, to his mother. He failed out of college and jobless, even the job his father gives him running the drug store, is futile. His parents are eager to marriage him with the right girl, Dorothy Pusey, who lives across the street, will amend Tracy out. They don't know about Tracy's relationship with Nonnie. One of Tracy's best friends is Henry, who is the same age as Tracy and with whom he grew up. Henry, who is black, stayed at the Deen home when his parents moved away for a better opportunity. His mother had been a servant in the Deen household for many years. Henry lives in the cabin, in the Deen's backyard, in which his family had lived.

Tracy is in quite a quandary because he has, finally, succumbed to all the pressure in town, from parents, the preacher, and the neighbors, to ask Dorothy to marry him. But, now, what to do about Nonnie? He comes up with the scheme of paying Henry to marry her. Henry has been besotted with Nonnie all his life. Henry received money from Tracy to marry with Nonnie. But, Nonnie doesn't like the idea at all! Ultimately, Nonnie's family finds out that she is pregnant, that she wants to keep the baby, and that Tracy is the father. Her brother, Ed, becomes enraged and shoots Tracy, killing him. Sam, a life-long family friend of the Anderson's, who is a physician and who owns a car, drives Ed, in the middle of the night, to Macon, where he catches a train to NYC.

Apart from the color of their skin, there is nothing salacious about this romance. The two meet as children, after Tracy defends Non from a local bully, and intensifies when he returns from World War I. Smith enters the minds of more than a dozen residents of Maxwell, Georgia, both white and black, creating a vivid anatomy of the town's racial geography. To heighten the novel's sense of immediacy the sense the reader has of being among these characters, in Maxwell, as the

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## T. S. ARTHUR: A RECIPROCAL OF SENSIBILITY AND SYMPATHY IN AN ANGEL DISGUISE

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### ABSTRACT

*T. S. Arthur was a popular 19<sup>th</sup> century American author. Virtually forgotten now, Arthur did much to articulate and disseminate the values, beliefs, and habits that defined respectable, decorous middle-class life in America. Smitten by literature, Arthur devoted as much time as he could to reading and fledgling attempts to write. He contributed poems under his own name and pseudonyms to a gift book called The Amethyst. During this time he participated in an informal literary coterie called the Seven Stars, whose members also included Edgar Allan Poe. The 1830s saw Arthur mount a number of efforts to become a professional author and publisher, to hone his craft. An Angel Disguise is touching and sentimental story full with the milk of humanity. It depicts the destiny of a desperately diseased little girl, Maggie. After her mother's death some neighbors took the eldest boy, and the girl. But nobody wanted to take a poor little Maggie. The reason was clear, her inability to go, and even to leave a bed. But, the author convinced us, that they were still some good people in the world. The novel shows the vigor and value a person can be advanced under the influence of love, kindness and glinted eyes of an innocent girl.*

**Keywords -** Compassion, Helpless Voice, Bereavement etc.

### Introduction -

An Angel in Disguise is a popular novel of an American writer, novelist, journalist, writer and editor Timothy Arthur. His canvas of writing is very large. He became a voluminous writer of memories of home lifestyles, and additionally organized a series of histories of the one-of-a-kind states of the union. All his memories have a few ethical end in view, a lot of them being devoted to the support of the temperance motive. An angel in hide is a brief tale with extraordinarily transferring and interesting plot. It describes the future of a bit Maggie, who is hopelessly diseased. after her mother's demise some neighbors took the eldest 12-years vintage boy, and the female of 10-eleven years. But nobody desired to take a negative little Maggie. The motive become clear her incapacity to move, or even to leave a mattress. The tale has best a two sentences description of the area it befell. The place the tale occurred is the antique tumble down hut looks as if a place of refuge from summer time heats and

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winter cold. The outline of the living area of the own family suggests us its financial function. This description could be very quick, but the writer has used it very as it should be.

The hosts of characters are blanketed into it. The primary man or woman of the tale is a touch hopelessly diseased female, named Maggie. She has a brother John, who is 12, and a sister Kate, who has 10 or 11 years. Maggie's mother is dead. A negative little lady is on my own on this huge cruel international. But the global isn't without true humans. Joe Thompson, the wheelwright, had an awesome coronary heart, and it become very soft in some locations. He appreciated children, but existence has no longer given him his personal youngsters. Joe had a mind and strong mood, and precisely this helped him make a decision to take a girl to his house. Then we meet another individual, who's not much less important than previous one. That is Joe's wife Mrs. Thompson. She changed into befell to be childless, and become no longer a female of saintly temper. She became in opposition to this infant in her house. Joe Thompson considered his spouse to be vinegar tempered; he turned into frightened of her reaction regarding this little toddler. Mrs. Thompson tried to hide her hostility at the same time as speaking with Maggie, but love could shop the sector. Mrs. Thompson became kinder, her heart filled up with the mild and love. The cuteness of that ill lady was so sweetie to her soul, that she carried her in her coronary heart as a valuable burden.

In order to show the principle idea and render the general mood of the passage vividly and convincingly the writer used various gadgets to analyze the story masterfully. The writer desired to apprehend the seriousness of Joe Thompsons' doings and sayings. the writer used it to demonstrate the miserableness of the children's mom. summing up the evaluation of the textual content, one need to say that Arthur brilliantly used all of the stylistic gadgets, which help to reveal the primary man or woman's nature and to create a true-to-existence atmosphere of the events depicted. The author forced us to sense and revel in the life of the characters. the analysis of the story that T. S. Arthur brilliantly uses quite a few extraordinary stylistic gadgets, which assist to reveal the main character's nature, to create a actual life affect of the activities represented and what's extra, to convey domestic to the reader the main concept of the text. t. s. Arthur's ability to draw the reader's attention even to the pettiest information appeals plenty. The story is certainly clean to read and understand, however it's simply thought provoking and full of human appeal. This story is one of the excellent to study it for everybody who wants to spend time as candy as sugar. 'An angel in conceal' with the aid of T. S. Arthur will precisely emerge as an thrilling apple of lifestyles. The characters we meet inside the tale below analysis are John, Kate, Maggie, Mrs. Ellis, Farmer Jones, Joe Thompson and his wife Jane Thompson. The protagonist of the story is Maggie, 'an angel in disguise', who changed the Thompsons's life.

The writer well-known shows all the characters by means of each direct and indirect characterization. Speaking about characterization, the writer doesn't provide his direct appreciation of what the person does however leave it to the reader to make conclusions as to the personage's moves. Mr. Thompson is a sturdy guy, but the revel in with Maggie touched him greatly, that's why he cried a touch bit. And what's extra, the ones tears proved that he became happy that his spouse modified. So, this case shows modifications in Mrs. Thompson's personality. At the beginning, she turned into without a doubt against of looking after Maggie. the writer renders her temper by way of speech characterization: 'why didn't you allow her move, then. What did you deliver her right here for?', 'then why did not you

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17-18

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## भावमाला

प्रमाण-च, अंक-१७, प्रमाण-सं-जन-२०१८

• संपादक - प्रा. डॉ. प्रल्हाद घावरे •





“फर्मानि आणि इतर कविता” : एक आकलन

- प्रा. डॉ. विलास तावडे, अकोट

[illegible]

‘भूमि आदि इतर कविता’ या संग्रहातील कविता खान्देशच्या मातीत रुजणाऱ्या व त्याहीपलिकडे जाऊन भारतीक्षेत्रातील सर्व प्रवाहातील विविधाच्या आणि जाणीवांच्या कलात्मक कवितींशी नाते सांगणाऱ्या आहेत म्हणून त्यांच्या कवितेतून सर्वहोत वार्ताच्या प्राणीवा समर्थपणे व्यक्त होतात. प्रांभ रोयटाचा या रहित्यापणे कवितेतून ते लिहितात-

‘गेली कुठे झडी ती टपका घरास नाही’  
बुडतिल गाव इतका धोका पुरास नाही’  
पोटास सागराच्या उठतात या सुनामी  
आता पुढे जगाचे जगणे शकास नाही,  
प्रारंभ शेवटाचा बाला भ्रणायचा का?  
इतके असून सुद्धा कोणी उदास नाही...

अस्वस्थ वर्तमान आणि सामाजिक परिस्थितीचे वास्तव पदर उलगडून कवि आपल्या अस्वल प्रतिभेने ग्रामीण जीवनातील मानवी मनाचे चोखंदळ निरीक्षण केले आहे. ग्रामीण भागातील माणूस हवालदिल झाला असला तरी तो निराश नाही चांगले दिवस येतील या क्षणाची तो वाट पाहतो आहे. असा भासावाद त्यांनी कवितेतून व्यक्त केला आहे. मग या कवितेत कवी लिहिता-

‘पिकारली माती । कणसाला मोती  
प्ररोपरी वाती । तेजाळल्या ॥  
कुंकवाचा घाम । पदरात दाम  
झोळीतला शाम । पायगुण ॥’

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आजमाता / ३०

शेतकऱ्याचे कष्टग्रस्त जीवन त्याचे काळ्या मातीशी असलेले इमान, अविश्रुत मेहनत व त्यातून त्याला मिळालेले समाधान याचा उद्देश कविने सज या कवितेतून केला

आहे. इथे कविवर्य नाळ पातीरी डुलली आहे आणि ती जगण्याची खूप नवी तहाप  
सांगत आहे. असा कविता जावनाचा आपल्याला भास होतो. 'महाली' या कवितेत  
कविते 'जगण्याची खिचट वाट व गतजीवनाचा स्मृतीमूळ स्वजनांची तीव्र कोमल  
जाणीव व्यक्त केली आहे-

‘येधे युगायुगाने जळते अजून आहे  
जात्यात दुःख आई दळते अजून आहे.  
मोडून लेखणीला आता करा मशाली  
बाहेर पुस्तकाच्या भलते अजून आहे...

१. आणखे यांच्या कवितेने मराठी कवितेच्या अस्तित्वाचा परीक्ष व्यापक करण्याचे महत्त्वपूर्ण कार्य केले आहे. तेव्हाचि जीवनात माणसाची होणारी सरोहोलात अतिशय नरळखणे कविते च्याक आहे. 'अवाई' या कवितेत माणूस हाणून त्यासाठी त्यांच्या वाट्याला येणारी असाहा दुःख जीवनव्यवस्थेचे भावात क्रूर चित्र कवितेत चित्रित केले आहे काही महत्वात.

‘विजून प्रश्न झाले पोटास भाकरीचे  
त्यांना स्मशान उरले होते दिशात दाही,  
देवू नकोस माते तू मन्म माणसांना  
होतीच मारलेली ती ही कुणी आवई...

मानवी मूल्यांची जपयूक कारणासाठी दहापड्याती त्यांची कविता काळाचा परीघ ओलांडून पुढे गेलेली दिसते. मानवी जीवनातील जातीयधर्मेचे मार्मिक भाष्य करताना त्यांची कविता जीवनाचे गांधीयनि पाहण्याची सक्त ताकीद देते. 'तारणा' वा कवितेत ते लिहिलेले-

\*अत्रात भेद नाही पंक्ति भेद आहे  
पाश्यास रंग नाही सर्वासमान वार,  
विज्ञान शिक्षाताने यंत्रात झोपलेले

जागा कुणीच नाही पृथ्वीस ठाणारा..

येथे आजची भवतीच्या जाती वास्तव्याची अगतिशक्ती सूर्यचरने कविने कवितेत चित्रित केले आहे. सामाजिक अंतराविरोध स्पष्ट करणारी विचारशील व्यक्तीची ही कविता आहे. या काव्यसंग्रहातील कविता अतिशय जागृत, मुदनातील कविता म्हणजे 'जाई ! मला जन्म देऊ दे !' ही कविता होय या कवितेत कवी म्हणतो-

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पाठ्यभाला / ३१



'तू बसे गाहिले जग मला देखील पाहू दे  
सांग आहे बाबतज जन्म मला घेऊ दे ॥१॥  
तू पहील, तू कन्ना, तू एक तरी आहे  
काल दिव्ये तू होती आज तिचे मी आहे  
सांग आहे बाबतज जन्म मला घेऊ दे ॥'

हा कवितेत कवीने श्रीगुरुनानकचरितं या गुरुतीचा संदेश दिला आहे 'लेक  
बाबतज' हा पार्श्विक उपदेश कवन मुलीचे महत्त्व त्यांनी वेगळ्या शैलीने कवितेद्वारे  
सांगितले आहे. तमिळ प्रतिका, परिणामकारक शैली, चितनशील आशयाचे नाते  
सांगण्याची त्यांची कविता अत्यंत विचाराशील बनविले व सन अत्यंत कवन टाकले.  
सांगण्यापेने होत असलेली विषयगुहा विला अगळा धमका म्हातून् अतिशय मोडसपणे  
एका बाबतजेचे मनोगत कवितेने कवितेनुत व्यक्त केले आहे. 'पन्ना' या कवितेत कवितेने  
हनुवारापणे मुलीच्या मनातील सोमलभाजना व्यक्त केले आहे अर्हेत कवी म्हणतात-

'पन्ना माझ्या आईला बोलू नका  
की जन्म आहेच आधी मुका,  
दिव्यातील वात, झाली दिनरात  
आई माझी एकटी आहे लाखात,  
रा तिच्या प्रेमाचा नाही फिका  
पन्ना माझ्या आईला बोलू नका...'

कीचे महत्त्व पटवून सांगून कीबाईकडे पाहण्याचा सांगण्याचा दृष्टीकोन बदलला  
पाहिजे हे कवितेतून आगळ्यावेगळ्या शैलीद्वारे कवितेने सांगण्याचा प्रयत्न केला आहे.  
कीपुरुष समानतेचे महत्त्व पटवून देतांना कवीने स्वातंत्र्य, सभतेचे नाते प्रत्येकाने  
जोपासले पाहिजे. त्यातही पतीपत्नीचे नाते प्रत्येकाने जोपासले पाहिजे. त्यातही पतीपत्नीचे  
नाते व त्यांचे संबंध कसे समानतेचे असावे परंतु निवृत्तीने कसा भेद केला हे सांगतांना  
कवी 'उंबरा...तोरा' या कवितेत लिहितात-

'आई पराचा उंबर बाप पराचे तोरा  
असें असतही केला भेदभाव विरतीन,  
तुला स्थान पुराणात तुझा उरो इतिहासी  
तुझ्या माळी बापा आल दिले कसे वपरासी...'

की पुरुषा मध्ये भेदभाव विरतीने केला असे कवी म्हणतात, परंतु हा भेदभाव  
निवृत्तीने केला परंतु मानवच त्याला जबाबदार आहे. त्याने ही जबाबदारी निवृत्तीचा व  
प्रकलना स्वतः शिफार पेटवून कीपुरुषासम्ये समानता प्रस्थापित केली पाहिजे असे  
मला वाटते राष्ट्रपिता म. गांधी यांनी देशासाठी आपले प्राणार्पण लावले. उरी माया

पेतली नाही. अहिंसावादी धडकलीचे ते पुरस्कर्ते गत. सगळ्या त्यागवृत्ती ही त्यांची  
जागण्याची पट्टी होती. म्हणून कवी 'बापू' कवितेत लिहितात-

'मोती झाले त्या घामाचे त्रिचे त्रिचले बापू

मोले जैसा चाल पेमे जीवर झाले बापू,

आदर्शाचा विपुल ठेवा सदाचार दागीना

ही मधुद्री धन्यार्पणे मिळवत पेने बापू..'

गांधीजी हे देशासाठी एक अद्वय्य व्यक्तीत्व होते. आपल्या त्यांच्या आदर्श  
च्यात असे त्यांचे व्यक्तिमत्त्व आहे. अजब तसे देशत नाही. त्यांच्या विचारांची,  
त्यागाची व निरुपेची पाबपाझी होताना दिसते गांधी खत कवीने व्यक्त केली आहे.

आजकाल देशहिताच्या गोष्टी कुणी करताना दिसत नाही. प्रत्येकजण स्वाधी  
झाला आहे. म्हणून 'बंदी' या कवितेत कवी लिहितात-

'साराच व्यर्थ गेला इतिहास छारलेला

गोष्टी शिवाय माझ्या सांगते कां विज्जाई,

कासावरी चढोनी गेल्या इथेच माना

स्वातंत्र्य स्वस्थ झाले आता दिसत दाही...'

त्या स्वातंत्र्यविप्रेणी देशासाठी आहूती दिली त्यांचेही लोकांना मोल राहिले  
नाही असे कवी म्हणतात ही चवर्चस्वती कवीने 'बंदी' कवितेतून व्यक्त केली आहे.

'माणूस' कवितेत कवी लिहितात-

'विद्वान भट्ट झाले आता सधेकामासी

ज्ञानस पात्र आता खुर्चीतले स्वामी,

हनुवर चेहरा तो माणूस चाललेला

सत्ताच भावटपांच्या हातात बैठ गेली...'

आता माणसाचे मानसगणेशिक राहिले नाही. डॉपी विद्वान माणसे पुढे वेवून  
आपलीच विद्वान आहोत असे सांगायला लागले आहेत. त्यामुळे माणसासाठी खरे  
सत्ताधारी राहिले नसून डॉपी मान्य सत्ताधारी सर्वे दिसतात असे कवीला सांगायचे  
आहे. माणूस कवितेतून कवितेने माणवतावादी विचार बलबाध होत आहेत व डॉपी  
विचार पुढे येतांना दिसतात ही खंत व्यक्त केली आहे. 'स्पर्धा' कवितेत कवी

लिहितात-

'माणूस काढण्यात श्रीमंत देव माझा

अद्याप माणसा का श्रीकांतला पिकाती,

साहसात स्वच्छांरी मोडिनें चालले अन्

बलतीत मात्र माझ्या का तुंबल्या पट्टी...'

आपण हा विचार झाला पाहिजे. आपण बोलली बसे कात नाही. त्यामुळे

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अंगीत जीवनाची स्पर्धा कायद्यातून होत नाही. प्रत्येक वेळाला प्रतीत व कला कृती करावी. तसे आपल्याला स्पर्धेत जिंकता येईल. गायीतुरा काव्याचीच स्पर्धा होईल. असे कविला वाटते. भारत हा कुचीकभर देश आहे. असे आपण म्हणतो परंतु प्रत्यक्षात श्रमकरी आपल्याला करताना दिसते, मग करताना दिसतो. कुचीकडे देशपर स्पर्धकता अभिमान राखिल्या जाते. परंतु गानत गायीत, तुम्हा घाल्या आहेत ही वास्तवता कवीने विवरीत करून वास्तव संपादनात कवितेतून विवरीत केले आहे.

'कर्मन' वा कवितेत कवी समाजातील विविधता विवरीत करून त्यातील व्यंग बाहेर काढण्याचा प्रयत्न केला आहे. कर्मन वा कवितेत कवीने समाजातील दुःख, दुःख, गरिबी, वेदना आणि सर्वसाधारण माणसाचे होत असलेले नोचन हे नानाविध प्रश्न परिधानकारक शैलीने कवितेतून मांडण्याचा प्रयत्न केला आहे. कवी म्हणतो -

'माने तुझे नि माझे उरले न ऐकते  
भाड्या हुक्या व्यथांना उरलेत पाहणारे,  
कर्मन सांग देऊ हुक्या दिशेत आता  
वे दुःख ना परंतु वेगळी संपणारे...

अशा प्रकारे दुःखाची कला व त्यासाठी प्रयत्नलेली कला कवीने कर्मन कवितेतून व्यक्त केली आहे. हे दुःख कविचे एकदमच नाही तर ते सर्वहारा कर्माचे समष्टीचे आहे. हे त्यांच्या कवितेतून विवरीत होताना दिसते. समाजातील विषयस्थित कवी आपल्या उपक्रमा बोंड्यांनी पाहतो आहे. देशातील घडामोड, हायड्रोजन, काळा बाजार हे पाहून कवी स्तब्ध होतो. त्यामुळे त्याला ह्या मानवी जीवनाची चिड येते वरील ह्या अनेक घटनाविषयीच कवी म्हणून पुढील काही काही शब्द कवीला आहे म्हणून कवी उद्दिष्टाने 'अह' वा कवितेत लिहितो -

'दरोज काडणारा घुरीया कधी हवाला  
मठीत रवायड्याचा माणूस ठार झाला,  
अह हुक्या हुधाची राखेल कोण आई  
होवत रोज येतो ओठात शब्द आई...

अशा प्रकारे देशाची, समाजवास्तवाची घा आणि मूल्यनिश्चित समाजासाठीचा जागर त्यांच्या कवितेत ओतप्रोत पारलेला आहे असे दिसून येते. या काव्यसंग्रहातील भाव, भावना, बंडेदारा आणि ३१, रंग, पाव, मराठीभाती, मंडेकर, कोडे, कण, मलम, दुर्ग, पाषाण इत्यादी कविता ह्या अर्धपूर्व असून एकाच अस्तित्व निमीषात काव्याच्या आहेत म्हणून हा काव्यसंग्रह मराठी कवितेला नवे प्रळय देणारा ठरेल असे म्हटल्यात बाबते होऊ नये असे मला वाटते.

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प्रा. वा. ना. आंधळे यांनी कर्मन आणि इतर कविता वा संग्रहाच्या माध्यमातून समाजाचे पारंपरिक दुःख, वेदना विविध रंगात देत परिचरनाचा लढा उभाकरून समाजातील सर्वच प्रश्नांना हात घातला आहे. म्हणून त्यांच्या कवितेत एकसुरीयता येत नाही. त्यांची कविता सर्वांसमोर येण्याचे परिपूर्ण करते.

कवीने प्रचलित भाषातील जतनेचे, तोकक्याचे, श्रीकांचे, प्रशासनाचे बोगडाराचे आणि एकुलथ संपादक्याचेच घटक होत्याच्या उर्ध्वताचे प्रश्न कवितेतून मांडण्याचा प्रयत्न केला आहे. जनुकाही सर्व अनुभूतीचे सापेक्षता कवी कवितेतून मांडताना दिसतो. शरदार पण उलट प्रतीमा, ओखती शैली, अत्यंत चित्तगर्भ वाङ्मयी कव्य समाजवास्तव सर्वेक्षकपाने बाबकांसमोर ठेवण्याचा प्रयत्न कवी या काव्यसंग्रहाच्या माध्यमातून करीत आहे. त्यांच्या या वाटपार्यास पाहता मनःपूर्वक शुभेच्छा...!!! तसेच वैसासिक साधनाला परिचाराच्या वतीने मुद्रा मरस्वी शुभेच्छा

० कर्मन आणि इतर कविता  
कवी- प्रा. वा. ना. आंधळे  
संवाद-१४२२०६११४

-प्रा. डॉ. विनायक तापडे  
अकोट जि. अकोबा  
संवाद-१४२२०६३२९६

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### तीन गुणदोष...

एक तरुण सल्यानत चालला होता. त्याला वाटेत तीन विद्या भेटल्या. त्याची नावे विद्याली तसेच कुडे राहतात म्हणून चौकशी केली, पहिलीने उत्तर दिले, 'माझे नाव 'मुदी' असून मी होवल्यात राहते. दुसरी कुद्याली माझे नाव 'लुका' असून मी होवल्यात राहते. तर तिसरीने सांगितले माझे नाव 'हिममत' असून मी इटल्यात राहते.

पुढच्या त्या तीर्थीना नमस्कार केला व ती पुढे विद्याला बोलावून देऊन त्याला तीन भवेकर पुढे घेऊन त्याने त्या तिर्थीत पण त्याची एकवाणी ठिकठिकाणे व नावे विद्याली, पहिल्याने उत्तर दिले, माझे नाव 'रा' असून मी होवल्यात राहते. दुसऱ्याने उत्तर दिले की, त्याचे नाव 'लोभ' असून तो होवल्यात राहते, तर तिसरा म्हणाला, माझे नाव 'भव' असून मी 'इटल्यात' राहते. तो तरुण उदात्तला, 'मुदी' सर्व खोटे बोलत आहेत. होवल्यात लुका व इटल्यात हिममत राहतात, मला त्या बोल्या वेळापूरी भेटल्या होत्या. त्यावर ते तिडे म्हणाले, आम्ही गहायला आले की, त्या वेळ पोरना करतात.

जीवनात तीन गुण महान असतात. बुद्धी, लज्जा, व साहस या तीन गुणांना भव करीत असतात अनुक्रमे क्रोध, लोभ व भय हा तीन दुर्गुणामुळे जीवनाची दिव्यता घट्टीत घट्टी होणे, तीन सदगुण देवता समान आहेत, तर तीन दुर्गुण देवा समान आहेत.

-संकलन-बलवर्धन, अमरावती

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साधना/३५



# फर्मानि आणि इतर कविता

आशय आणि आस्वाद

संपादन : तुषार चांदवडकर





# A Study of Acoustic Parameters of 2-(diphenylmethoxy)-*N,N*-dimethylethanamine in Different Mixture of Solvents at 299 K

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## ABSTRACT

Ultrasonic studies provide information in understanding molecular behavior and intermolecular interactions of 2-(diphenylmethoxy)-*N,N*-dimethylethanamine drug in solvent mixtures. The Measurements of density, viscosity and speed of sound of 2-(diphenylmethoxy)-*N,N*-dimethylethanamine drug have been determined by experimental procedures in different medium. From the experimental data various acoustical parameters such as apparent molar compressibility ( $\phi_k$ ), apparent molar volume ( $\phi_v$ ), adiabatic compressibility ( $\beta_s$ ), specific acoustic impedance ( $Z$ ), intermolecular free length ( $L_f$ ) have been evaluated. The concentration range is 0.02 to 0.1 mol dm<sup>-3</sup>. The measurements are conducted at 299K in different solvents. The variation of these acoustic parameters is explained in terms of solute -solvent molecular interaction occurring in Drug solutions.

## Introduction

Ultrasonic waves provided valuable information about the structure of solid<sup>1</sup>. The measurement of ultrasonic velocity has been adequately employed in understanding the nature of molecular interactions in pure liquids<sup>2-5</sup> and liquid mixtures<sup>6-7</sup>. Ultrasonic propagation parameters yield valuable information regarding the behaviour of liquid systems, because intramolecular and intermolecular association, dipolar interactions, complex formation and related structural changes affect the compressibility of the system which in turn produces corresponding variations in the ultrasonic velocity. The acoustical and thermo dynamical parameters obtained in ultrasonic study show that the ion solvation is accompanied by the destruction or enhancement of the solvent structure<sup>8-11</sup>. Excess thermodynamic properties of liquid mixtures are of great interest to conveniently design industrial processes and also to



provide useful information on the molecular interactions required for optimizing thermodynamic models. When two or more liquids are mixed there occur some changes in physical and thermodynamic properties because of free volume change, change in energy and change in molecular orientations. Derived thermodynamic and acoustical parameters like internal pressure, free volume and acoustic impedance are of considerable interest in understanding the intermolecular orientations in binary liquid mixtures<sup>12-14</sup>. Excess thermodynamic properties of mixtures are useful in the study of molecular orientations and arrangements<sup>15-16</sup>.

For the present study 2-(diphenylmethoxy)-*N,N*-dimethylethanamine<sup>17</sup> drug is selected. This drug is an antihistamine that reduces the effects of natural chemical histamine in the body. It is used for the treatments of sneezing, runny nose, watery eyes, hives, skin rash, itching and other cold or allergy symptoms. The acoustic properties of 2-(diphenylmethoxy)-*N,N*-dimethylethanamine have been studied in 30% Methanol-water, 30% Dioxane-water and 30% DMF-water solutions at 299 K.

### Experimental

Solvents methanol, dioxane and dimethyl formamide used in the present work were of AR grade and were purified and dried by the usual procedure. Densities, viscosities and ultrasonic velocities were measured at 299 K over a wide range of composition. Densities were determined by using bicapillary pycnometer. The viscosities were measured by precalibrated Ostwald type viscometer. Ultrasonic velocity measurements were made by using an ultrasonic interferometer (Mittal Enterprises, New Delhi) at a frequency of 2MHz with a tolerance of  $\pm 0.005\%$ . All the measurements were carried out at 299 K.

### Theory

Acoustic parameters such as apparent molar compressibility ( $\phi_k$ ), apparent molar volume ( $\phi_v$ ), adiabatic compressibility ( $\beta_s$ ), specific acoustic impedance ( $Z$ ), intermolecular free length ( $L_f$ ), Limiting apparent molar volume ( $\phi_v^0$ ), Limiting apparent molar compressibility ( $\phi_k^0$ ) were determined using following relations.

Ultrasonic velocity

$$u = \lambda \nu \quad \text{-----} \quad (i)$$

Adiabatic compressibility

$$\beta_s = 1/u_s^2 \rho_s \quad \text{-----} \quad (ii)$$

Apparent molar volume

$$\phi_v = 10^3(\rho_0 - \rho_s)/m - \rho_0 \rho_s + M/\rho_0 \quad \text{-----} \quad (iii)$$

Apparent molar compressibility

$$\phi_k = 10^3(\rho_0 \beta_s - \rho_s \beta_0)/m - \rho_s \rho_0 + \beta_s M/\rho_s \quad \text{---} \quad (iv)$$

Intermolecular free length

$$L_f = K (\beta_s)^{1/2} \quad \text{-----} \quad (v)$$



Specific acoustic impedance  $Z = \rho \cdot u$  -----(vi)

Limiting apparent molar volume  $\phi_v = \phi_v^0 + S_v C^{1/2}$  -----(vii)

Limiting apparent molar compressibility  $\phi_k = \phi_k^0 + S_k^{1/2}$  -----(viii)

Table no.1

Experimental Data of Density, Ultrasonic Velocity and Viscosity of 2-(diphenylmethoxy)-N,N-dimethylethanamine in different solvent at 299K

Solvents	Conc.mol.dm <sup>-3</sup>	Density $\rho$ , Kg m <sup>-3</sup>	Ultrasonic Velocity(u)m/s	Viscosityx10 <sup>-3</sup> Nsm <sup>-2</sup>
30% MeOH-Water Medium	0.02	1096.23	1676.5	1.21148
	0.04	1096.32	1684.0	1.21823
	0.06	1096.52	1687.2	1.21901
	0.08	1096.75	1691.1	1.21921
	0.1	1096.91	1695.1	1.22021
30% Dioxane-Water Medium	0.02	1082.09	1799.5	1.23251
	0.04	1082.16	1701.0	1.23602
	0.06	1082.66	1715.2	1.23856
	0.08	1082.94	1711.1	1.23936
	0.1	1083.15	1789.1	1.23250
30% DMF-Water Medium	0.02	994.19	1648.3	0.93239
	0.04	995.91	1677.4	0.93959
	0.06	997.05	1681.1	0.94282
	0.08	998.29	1682.2	0.94341
	0.1	998.89	1683.3	0.94957

Table no.2

Variation of some acoustical parameters with concentration of 2-(diphenylmethoxy)-N,N-dimethylethanamine in different solvents at 299 K

Solvents	Conc.mol.dm <sup>-3</sup>	$\beta_s \times 10^{-10}$ Pa <sup>-1</sup>	$\Phi_v \times 10^{-5}$ m <sup>3</sup> mol <sup>-1</sup>	$\Phi_k \times 10^{-14}$ m <sup>3</sup> mol <sup>-1</sup> Pa <sup>-1</sup>	$L_f \times 10^{-11}$ (m)	$Z \times 10^5$ Kg m <sup>-2</sup> sec <sup>-1</sup>
30% MeOH-Water	0.02	4.3858	-71.87	-73.943	4.2196	16.4159
	0.04	4.3669	-53.12	-32.731	4.2035	16.4345
	0.06	4.3458	-9.51	-21.458	4.0105	16.4496



Medium	0.08	4.3163	5.30	-9.0120	3.0096	16.4512
	0.1	4.2825	12.19	-7.0787	3.0041	16.4854
30% Dioxane- Water Medium	0.02	5.9694	-61.5	-82.7968	5.9366	15.2693
	0.04	5.8659	-9.87	-47.6369	5.1268	16.2832
	0.06	5.8256	7.95	-23.6684	5.0655	16.3171
	0.08	5.8125	10.61	-19.5196	5.0126	16.3468
	0.1	5.1253	15.93	-14.5892	5.0004	16.3422
	0.02	3.6652	9.82	312.7213	5.4702	14.6341
30% DMF- Water Medium	0.04	3.6128	21.1	148.5842	5.4628	14.6653
	0.06	3.5802	23.5	122.4264	5.4547	14.7015
	0.08	3.5659	25.4	87.1877	5.4456	14.7432
	0.1	3.5359	26.5	72.4595	5.4385	14.7640

Table-3 Limiting values of  $\phi_v^0$  and  $\phi_k^0$  along with slope ( $S_v$  &  $S_k$ ) for 2-(diphenylmethoxy)-*N,N*-dimethylethanamine different medium at 299K temperature

Temp. T (K)	Medium	Parameters			
		$\phi_v^0 \times 10^{-5}$ $\text{m}^3\text{mol}^{-1}$	$\phi_k^0 \times 10^{-14}$ $\text{m}^3\text{mol}^{-1}\text{pa}^{-1}$	$S_v \times 10^{-5}$ $\text{m}^3\text{mol}^{-3/2}\text{dm}^{3/2}$	$S_k \times 10^{-14}$ $\text{m}^3\text{mol}^{-3/2}\text{dm}^{3/2}\text{pa}^{-1}$
299K	30% M-W	-141.612	-84.31	546.26	256.21
	30% D-W	-82.414	-122.32	411.108	332.314
	30% DMF-W	5.763	611.21	59.381	-1513.12

Table-4 A and  $\beta$ , coefficient values at 299K in different medium for 2-(diphenylmethoxy)-*N,N*-dimethylethanamine

Medium	Coefficient	Temp 299 K
30%Methanol-Water medium	A	0.930
	$\beta$	-0.141
30%Dioxane-Water medium	A	1.435
	$\beta$	-0.179
30% DMF-Water medium	A	0.512
	$\beta$	-0.079



### Results and Discussion:

Table 1 shows that density ( $\rho$ ), ultrasonic velocity ( $u$ ) and viscosity ( $\eta$ ) increases with increase in concentration for all three systems. The increase in ultrasonic velocity is due to decrease in intermolecular free length ( $L_f$ ) as shown in table 2. This suggests that there is a strong interaction between 2-(diphenylmethoxy)-*N,N*-dimethylethanamine and solvent molecule. Adiabatic compressibility ( $\beta_s$ ) is a measure of intermolecular association or repulsion calculated from the measured ultrasonic velocity ( $u$ ) and density ( $\rho$ ). Adiabatic compressibility is found to decrease with increase in concentration. Since adiabatic compressibility is inversely related to the product of density and ultrasonic velocity based on this the compressibility is expected to decrease which has observed in the present case. When the sound waves travels through the solution, certain part of it travels through the medium and rest gets reflected by the ion<sup>6</sup> i.e. restriction for flow of sound velocity by the ions. The character that determines the restriction movement of sound waves is known as acoustic impedance ( $Z$ ). It has been found that acoustic impedance increases with increase in concentration. The apparent molar compressibility ( $\phi_k$ ) explains the solute-solvent and solute- solute interactions in solution and was calculated by using the equation no.(iv). The apparent molar volume ( $\phi_v$ ) is defined as the change in volume of solution for the added one mole of a particular component at constant temperature and pressure. It is thermodynamic property which helps in elucidating solvation behavior of electrolyte in solution. Apparent molar volume was evaluated from the density of solution and solvent.

It is evident from the table 3 that  $\phi_k^0$  values are negative for 30% MeOH-water and 30% Dioxane-water but for 30%DMF-water  $\phi_k^0$  values are positive. The negative  $\phi_k^0$  values are suggest solute- solvent interaction whereas positive values are due to solute- solute interaction, is further confirmed by  $\phi_v^0$  values which are positive for 30% DMF-water and negative for 30% MeOH-water and 30% Dioxane-water of the drug.  $S_v$  is a measure of solute – solvent interaction. It is observed from the table 3 that  $S_v$  values are higher in 30% MeOH-water and 30% Dioxane-water and low in 30% DMF-water solution. This confirms that in 30% DMF-water solution solute- solute interactions and in 30% MeOH-water and 30% Dioxane-water solute – solvent interaction predominate.

The viscosity B-Co-efficient has been derived from Jones-Dole equation

$$(c > 0.1m)\eta_r - 1 / C^{1/2} = A+B C^{1/2}$$



Where  $\frac{\eta}{\eta_0} = \eta_r$  is the relative viscosity  $A$  and  $\beta$  are the characteristics of the solute and solvent.  $A$  is Falkenhagen coefficient represent the contributor from solute-solute interaction and  $\beta$  is Jones Dole coefficient known to depend on the size of the solute particle and on the interaction between solute and solvent.

They were obtained by a least – squares treatment as intercept and slope of the linear plot of  $\eta_r - 1 / C^{1/2}$  Vs  $C^{1/2}$ . The graph for each system given linear straight line showing validity of Jones-Dole equation. The slope of straight line gives value of  $\beta$  co-efficient.

The viscosity  $A$  coefficient represent the ion-ion interactions and negative values have shown some physical significance. However negative  $A$  values have also been reported to be in other solvents in some studies.<sup>7-9</sup>

The large and small value of ' $A$ ' shows the stronger and weaker solute – solute interactions respectively. When solute is introduced into solvent of organic-water mixture it will interfere with the ordered structure of water in the solutes co-sphere. As only one solute is present so such variation in the values of  $A$  can be explained.

In the present study viscosity of liquid solutions increases with increase in concentration of drugs solution in 30% methanol -water, 30% dioxane-water and 30% DMF-water mixture. The increase in viscosity with increase in concentration may be attributed to the increase in solute solvent interactions.

Viscosity  $\beta$  coefficients have been established to arise from ion- solvent interactions and are responsible for introducing order or disorder in the structure of the solvent. Solute with negative  $\beta$  Coefficient is characterized as structure breakers indicating weak solute-solvent interactions. Such type of results is also shown by Reddy et al.<sup>18-19</sup>

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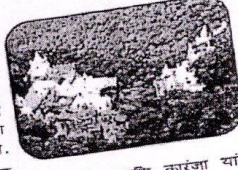




जैन धर्मीय राजा ईल व शिरपुर, मुक्तागिरी एक अभ्यास

प्रा. डॉ. प्रशांत प्रल्हादराव कोटे  
सहयोगी प्राध्यापक व इतिहास विभाग प्रमुख, श्री शिवाजी काला, माणिजय व विज्ञान महा.  
आकोल जि. अकोला.

प्रस्तावना  
“विदर्भत जैन धर्मीयांची प्रदीर्घ आणि समृद्ध परंपरा राहिली आहे. अकोला जिल्ह्यातील राजनाथ खिन्नखिनी येथे निव्वल्ल्या कास्य जैन प्रतिमा हा त्याचा पुरावा आहे. त्या इ.स. नवव्या शतकातील आहेत. या गावात जैन धर्म प्रचलित झाला होता. या काळात विदर्भावर राष्ट्रकूट वंशाने शासन होते, राष्ट्रकूट वंशात प्रथम अमोघवर्ष हा जैन होता. त्याने ‘आदीपुराण’ चा रवीना जिनसेन किंवा गणितसारसंग्रहाचा कर्ता महावीराचार्य सारखे जैन विद्वानांना त्याने राजाश्रय दिला होता. याशिवाय येथे जैन धर्मासंबंधी अनेक पुरावे मिळतात.<sup>१</sup> त्यातील शिरपुर, कारंजा, अकोला, एल्लचपूर, मेहकर, केळसर इ. पैकी शिरपुर, एल्लचपूर आणि कारंजा यांचा उल्लेख मोठ्या प्रमाणात येतो.  
इ.स. च्या १० व्या शतकात या भागात राष्ट्रकूटांचे राज्य होते. “त्यांचा मांडलिक म्हणून राजा ईल उर्फ श्रीपाल हा जैनधर्मावलंबी होता. त्यामुळे वेळू येथील लेण्या, शिरपुर येथील गावाबाहेरील अंतरीक्ष पारवनाथ, पवरी दिगांबर जैन मंदीर व मुक्तागिरी येथील दिगांबर जैन मंदीर या राज्याच्या कारकिर्दीमध्ये प्रामुख्याने निर्माण झाल्याचा इतिहास आढळतो. विदर्भातील प्रसिद्ध इतिहास संशोधक स्व. श्री. य. खु. देशपांडे, श्री. वि. भि. कोलते तसेच श्री यादव माधव काळे या सर्वांचे या बाबतीत एकमत आढळते. ईल हा राजा दिगांबर जैन धर्मावलंबी असल्यामुळे या सर्व स्मारकांची ठेवण, घडण व त्यामधील मुर्त्या या त्यातूनच असणे स्वाभाविक आहे.<sup>२</sup>  
विदर्भत जैन संस्कृतीचा प्रसार राजा ईलमुळे झाला असे सर्वत्र जैन ग्रंथात आढळते. राजा ईलच्या पुर्वजोवनाविषयी फारशी माहिती मिळत नाही. तो बरा परंपरेने गादीवर आला असे दिसत नाही. ‘इल्ली देशाच्या अचलपुराण तु जा. हरिवर्ष नावाचा राजा तिथे राज्य करतो आहे. त्याचा मरणकाल निकट आलेला आहे. तेव्हा तो राज्यलक्ष्मी तुझी प्रतिष्ठा करीत आहे.’<sup>३</sup>  
श्रीपाल किंवा श्रीगोपाळ शिरपुरला तपश्चर्या करीत होता. त्यावेळी त्याला जिनैत्र प्रसन्न होऊन जो दृष्टांत झाला त्यावेळी त्यात वरील विधान आले आहे. गोपाळ राजा बनण्याच्या आधी वन्हाडात इल्ली वंशाने राज्य असून त्याची राजधानी अचलपुर होती. त्याठिकाणी हरिवर्ष नावाचा राजा राज्य करीत होता. त्याला संतती नसून त्याचा मुलू जवळ आला होता. या दृष्टांतामुळे श्रीगोपाळ उर्फ ईल अचलपुरकडे आला. याचवेळी राजा हरिवर्षाचा मृत्यू झाला. त्याला मुलवाळ नसल्याने दरबारातील लोकांनी राजा निवडण्यासाठी हत्तीला बरा करतयानी अट ठेवली. ती श्रीगोपाळने स्वीकारली व हत्तीला बरा केले. त्यामुळे ठरल्याप्रमाणे त्याचा राज्यभिषेक झाला. त्यानंतर त्याने श्रीगोपाळ असे नाव धारण केले.







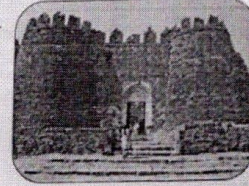
### विदर्भात यादवांचा सत्तेचा विसतार व उत्कर्ष एक दृष्टीक्षेप

प्रा. डॉ. प्रशांत प्रल्हादराव कोटे

सहयोगी प्राध्यापक व इतिहास विभाग प्रमुख, श्री शिवाजी कला, वाणिज्य व विज्ञान महा. आकोट जि. अकोला.

#### प्रस्तावना :

बाराव्या शतकाच्या अखेरीस देवगिरीच येथे यादवांची सत्ता उदयास आली. त्यांची विदर्भावर सत्ता निर्माण झाली होती. यादवांची माहिती सिंहणाचा पिता जैत्रपाल यापासून मिळते. त्याच्या पराक्रमाने वर्णन रामटेकच्या लक्ष्मणाच्या देऊळातील लेखावरून मिळते.<sup>१</sup> त्याने रुद्र आंध्राधिपती, चीड याचा पराभव केला होता. त्याच्यानंतर त्याचा मुलगा सिंहण गादीवर आल्यावर वऱ्हाड जिंकून आपल्या राज्याला जोडला होता. बुलढाणा जिल्ह्यातील अमडापूर येथे एक शिलालेख सापडला आहे (तो मिराशीनी - एपिग्रफिया इंडीका २१, पृ. १२७-१२८ मध्ये प्रकाशित केला)<sup>२</sup> एका कोरीव लेखावरून सिंहण नंतर त्याचा नातू कृष्ण गादीवर आला असे कळते.<sup>३</sup> त्याच्या काळाचा शके ११७७ (१२५४-५५) चा मराठी लेख वऱ्हाडात अमरावतीच्या ईशान्येस २० मैलावर नांदगांव (खंडेश्वर) येथील टेकडीवर खंडेश्वर, देवी व नरसिंह या तीन देवतांचे मिळून एक समान सभामंडप असलेले देवालय आहे. त्याच्या बाहेरील भिंतीवर लेख कोरला आहे. हे देऊळ हेमाडपंती आहे. म्हणजेच रामदेव यादव नृपतीचा प्रधान हेमाद्रि याने प्रचलित केलेल्या शिल्पपद्धतीचे आहे.<sup>४</sup> त्या देवळातील देवाच्या पूजेकरिता फुलाच्या लाखोल्या वाहाव्या म्हणून कित्येक गद्याणके (सोन्याची नाणी) दिल्याचा उल्लेख आहे. कृष्णाचा आणखी एक लेख चांदा जिल्ह्यातील मार्कंडीस सापडला आहे.<sup>५</sup>



कृष्णाचा मुलगा रामचंद्रराय हा लहान असल्यामुळे त्याचा भाऊ महादेव हा देवगिरीच्या गादीवर आला. त्याने उत्तरकोकणाधिपती शिलाहर वंशीय सोमेश्वरचा उच्छेद केला.<sup>६</sup> महादेवानंतर त्याचा पुत्र आमण गादीवर बसला. त्याच्यानंतर कृष्णाचा मुलगा रामचंद्राने त्याच्याकडून क्रांती करून गादी हिसकावून घेतली याचे वर्णन महानुभाव वाड्मयाच्या लीळाचरित्रात आले आहे.<sup>७</sup> तो श्री ज्ञानेश्वराचा समकालीन होता. त्याच्याच काळात रामटेक येथील लक्ष्मणाच्या देवळाकरिता काही (बहुधा त्याचा जीर्णोद्धार) केल्याचा उल्लेख त्या देवळाच्या गर्भगृहात लावलेल्या शिलालेखात आहे. त्यातच रामचंद्रदेव हा विलासात रममाण झाला असा उल्लेख आहे.<sup>८</sup> त्याच्याच काळातील भंडारा जिल्ह्यातील लांजी येथे एक तत्कालीन भग्न शिलालेख सापडला आहे. ज्यात वज्राकराच्या राज्याचा समूळ उच्छेद रामचंद्राने केला असे म्हटले आहे. तो गडचिरोली जिल्ह्यातील वैरागड होय. या ठिकाणी मुसलमानी काळापर्यंत हिऱ्याच्या खाणी होत्या. म्हणून प्राचीन लेखात याला वज्र किंवा वज्रागड असे म्हटले आहे (ऐनी-अकबरी, नारटेकृत भाषांतर, पृ. २२९-३०)<sup>९</sup>



AKANKSHA..... New Directions & Challenges

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© मासिकातील मते, संदर्भ, घटना, व अन्वयार्थ हे लेखकांचे स्वतंत्र संशोधन लेखन आहे. या बाबींशी प्रकाशक, मुख्य संपादक, संपादक मंडळ, सल्लागार समिती, समीक्षक मंडळ सहमत असेलच असे नाही.

© मुख्य संपादक — प्रा. मयूर लहाने का मानद पद एवं कार्य पूर्णतः अवैतनिक है। इस शोध पत्रिका के प्रकाशन, सम्पादन, एवं मुद्रण में पूर्णतः सावाधानी बरती गई है। किसी भी प्रकार की त्रुटि महज मानवीय भूल मानी जाए। त्रुटी हेतु सम्पादक, प्रकाशक एवं मुद्रक जिम्मेदार नहीं होगा।

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आजही माणवाला या अग्नी देवतेची कृतज्ञता म्हणून पूजा करावी, उत्सव करावा असे वाटते.

फाल्गुन महिन्यात येणाऱ्या होळी पौर्णिमेची तयारी गोंड लोक पौर्णिमेच्या चंद्राच्या पहिल्या कोरीपासून करतात. तेव्हापासून प्रत्येक घरातील मुल प्रत्येकाकडील लाकडे, गोवऱ्या, जमा करतात. काही वाळलेली लाकडे जंगलातून आणतात. खास करून स्वतः मोह फुलाची दारू गाळतात. होळीच्या दिवशी सत्रीला भगताकरवी होळीची विधीवत पूजा करतात. मधोमध येरंडाच्या झाडाच्या फांदयाची चौकट बांधतात. होळी पेटवल्या जाते. होळीच्या भोवती ढोल, ताशाच्या नादात स्त्री पुरुष फेर धरतात, नशत्य गाणी म्हणतात, आदिवासी गोंडामध्ये गाण्याला 'पाटा' म्हणतात

१) प्यारे मोहे ले लागो, प्यारे मोहे ले लागो  
मोहे ले लागो ले हो गयी दांडी  
हो गयो बांडी, मोहे ले लागो

२) ये माला सोनेकी हो, ये माला रोपयो की,  
अरी माला जो लागो दारओ, ये माला सोनेकी  
अरी यो सारी बारीयडका लतओ, ये माला रोपयोकी,  
ये माला जोला दारओ, ये माला रोपयोकी,  
ये माला जोला दारओ, ये माला सोनेकी,

पहिल्या गीतात होळीच्या मधोमध एरंडाची चौकट जळाली आहे. तिला 'दांडी' म्हटले आहे. त्याच वर्णन आहे. तर दुसऱ्या गीतात होळीला बत्ताशाची माळ अर्पण केली आहे त्याला 'माला' असे म्हटले आहे. सौभाग्यवतीच्या गळ्यातील माळेप्रमाणे तिचे वर्णन आहे. ही माळ सोन्याची, रूपयाची आहे असे वर्णन आहे. योग्य तिथे प्रतिमांचा वापर करून गीतामध ये ऐकणाऱ्याला सौंदर्यप्रतीत होते. रात्रभर होळी भोवती आदिवासी स्त्रिया नाचगाणी करतात ढोल ताशे वाजविणाऱ्यांनी वाजविणे कधी थांबवूच नये यासाठी त्याला गाण्यातून आवाहण करतात.

'रयते कुवामे, मेरे देण डोले रे, मेरे देण डोले रे  
मेरे देण सो बा दारे डुबा रो, रयते कुवा मे डुबे बा मरो  
डुबा मे मरो सारी रात, टुडा रो रयते कुवा मे डुबे बा मरो

त्या स्त्रिया ढोल वाजविणाऱ्याला म्हणतात, रात्रभर तुझ्याकडून ढोल वाजविणे होत नसेल तर तू विहिरित उडी मार, जीव दे. हे ऐकून त्याला ढोल वाजविण्यास जिद्द यावी हा त्या मागील उद्देश असतो रात्रभर ही नशत्यगाणी चालतात. दुसऱ्या दिवशी होळीलापुरण पोळीचा नैवेद्य अर्पण केला जातो. आपल्याकडे रंगपंचमीच्या दुसऱ्या दिवसापासून यांची रंगपंचमी पाच दिवसापर्यंत

हाता  
काळ  
गीता

त्याक  
जातो  
त्याल  
सहजा  
जाता  
सर्वांचे

जो पुर  
काठया

आम्ही  
शेवटी  
मान, शौ  
खेळात  
संगीत,

आपल्या  
होते. ति  
गावात :  
तालावर  
वेगळी :



त्यांना पहिजे असलेला फगवा लोकांनी दयावा, मनातील मळभ दूर व्हावी, हा त्यामागील उद्देश असावा. एरव्ही कुठेही कौर्य त्यांच्यात नाही नेहमी लाजरा-बुजरा आणि कामाला 'ढाण्या वाघ' म्हणून आदिवासींची ख्याती सर्वत्र आहे.

फगव्यात मिळालेला पैसा,धान्य शेवटी एकत्र करून आसपासच्या झोपडीतील सर्व लोक रोडग्याचे जेवण करतात. सोबतीला दारूही असते, आबालवृद्ध सर्वच सहभोजनाचा आस्वाद घेतात.

अत्यंत दारिद्र्यात जीवन कंठणाऱ्या आदिवासी गोंड जमातीत लोकजीवन अत्यंत कष्टाळू आहे. त्यातही आनंद शोधण्याचा ते प्रयत्न करतात त्यांचे लोकसाहित्य तेवढेच प्रतिभासंपन्न आहे. नृत्य, गीतावर ते मनापासून प्रेम करतात, भारताचे पहिले पंतप्रधान पंडित नेहरू म्हणतात 'भारतातील आदिवासीमध्ये निरनिराळ्या प्रसंगी नाचली जाणारी नानाविध लोकनृत्ये, लोकगीते आहेत, नृत्य,गीत,संगीताच्या धुदीत जीवनात आनंद भरीत राहण्याचा मार्ग आदिवासी संस्कृतीने आदिवासीला दिला आहे'<sup>६</sup> धर्मिक विधी,सण-उत्सव प्रसंगी म्हटली जाणारी नृत्य,गाणी यातून आपला आनंद ते व्यक्त करतात आणि निसर्गाशी एकरूप होतात. पंडित नेहरूचे विचार आदिवासी गोंड जमातीचा सण होळी व फगवा गीते याचा अभ्यास करताना पटतात.

एकूणच आदिवासी गोंड जमातीत होळी या सणाला अनन्यसाध पारणमहत्त्व आहे. आदिवासी हा निसर्गपूजक आहे. पंचमहाभूतातील 'अग्नी' ह्या एका घटकांचा या निमित्ताने पूजा होते या सणाच्या निमित्ताने वर्षभरातील दुःख, दैन्य-दारिद्र्य विसरून सुखद अनुभव ते घेतात स्वतःच्या जीवनात आनंद निर्माण करतात, नवी झळाळी त्यांना येते. 'जेरी' खेळातून पुरुषांच्या अंगी असलेले कौशल्य दिसून येते. फगवा गीतातील अश्लीलता, शिव्यानमधून त्यांच्या भावनांचे विरेचन होते आणि नव्या जोमाने वर्षभर आपल्या नियोजित कार्याला ते वाहून घेतात अशी ही आदिवासी गोंड जमातीची भावगंगा आहे.

संदर्भ ग्रंथ :-

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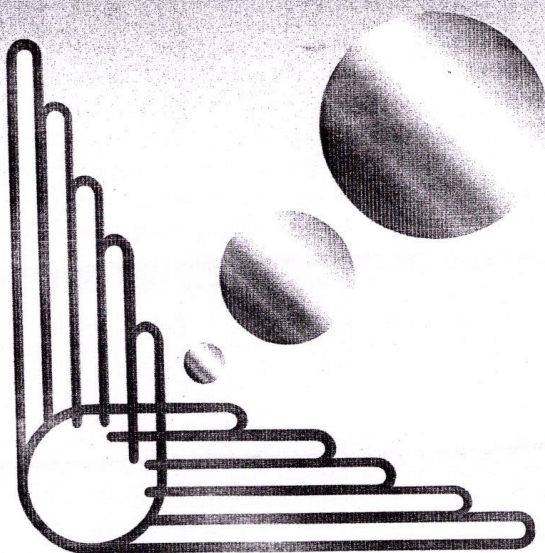
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५४)	महिला सबलीकरणात महाराष्ट्राची भूमिका	डॉ. प्रभाकर जगताप
५५)	मानवी जीवनातील शिक्षणाचे महत्त्व	डॉ. संजय लांडगे





विजयासाठी उपयोगी सिध्द होतील असे मंचाच्या प्रवर्तकांना मनोमन वाटत असावे. प्रत्यक्षात त्याला फारसा प्रतिसाद मिळाला नाही आणि मंचाला फक्त दोन जागांवर समाधान मानावे लागले होते. तीसरा घटक पक्ष असलेल्या अकोला विकास आघाडीने १३ जागा लढवल्या होत्या. त्यापैकी २ जागा अकोला विकास आघाडीला मिळाल्या होत्या. महत्वाची गोष्ट म्हणजे अकोला विकास आघाडीच्या वतीने निवडणूक लढविणारे उमेदवार बहुतांशपणे भाजपचे बंडखोर सभासद होते. विशेष म्हणजे आघाडीचे निवडून आलेले दोन्ही सभासद पूर्वाश्रमीचे भाजपचे असलेले विजय अग्रवाल व त्यांची पत्नी सुनिता अग्रवाल एकप्रकारे भाजपचे बंडखोर सभासद होते. संयुक्त विकास आघाडीचा एक घटक पक्ष असलेल्या मुस्लीम लिगला एकही जागा जिंकता आली नव्हती. पुर्वीच्या निवडणूकीमध्ये मुस्लीम लिगला १ जागा मिळाली होती. अशाप्रकारे संयुक्त विकास आघाडीला फक्त ९ जागा मिळाल्या होत्या. निवडणूकीच्या आधी आघाडी व युतीला पर्याय म्हणून संयुक्त विकास आघाडीची स्थापना करीत असल्याचे आघाडीतील प्रमुख पक्ष असलेल्या भारिपबमसंचे सर्वेसर्वा अॅड. प्रकाश आंबेडकरांनी सांगितले असले तरी प्रत्यक्षात तसे काही घडले नसल्याचे निवडणूक निकालावरून व संयुक्त विकास आघाडीला मिळालेल्या जागांवरून स्पष्ट झाले होते. डाव्या लोकशाही आघाडीचा प्रमुख घटक पक्ष असलेल्या समाजवादी पक्षाला एक जागा मिळाली होती. पूर्वीच्या निवडणूकीमध्ये समाजवादी पक्षाला दोन जागा मिळाल्या होत्या. आघाडीतील इतर कोणत्याही पक्षाला एकही जागा मिळविता आली नव्हती. भारतीय साम्यवादी पक्ष, शेतकरी कामगार पक्ष व रिपाई (आठवले) पक्षाला एकही जागा प्राप्त करता आली नव्हतीस्वतंत्रपणे निवडणूक लढविणाऱ्या महाराष्ट्र नवनिर्माण सेनेला फक्त एक जागा मिळाली होती. पूर्वीच्या निवडणूकीतही पक्षाला एकच जागा मिळाली होती. ऑल इंडिया युनायटेड डेमोक्रेटिक फ्रंट (युडीएफ) ला दोन जागा मिळाल्या होत्या. स्वतंत्रपणे निवडणूक लढविणाऱ्या बसप व लोकजनशक्ती पक्षाला एकही जागा मिळाली नव्हतीमहत्वाची बाब म्हणजे लोकजनशक्ती पक्षाला पूर्वीच्या निवडणूकीत दोन जागा मिळाल्या होत्या. महाराष्ट्र स्वाभिमान काँग्रेस, स्वाभिमान काँग्रेस, रिपाई (आं) व रिपाई (खोब्रागडे) पक्षाला एकही जागा मिळाली नव्हती. अशाप्रकारे निवडणूकीत सहभागी झालेल्या एकूण १९ राजकीय पक्षांपैकी १० राजकीय पक्ष असे होते ज्यांना एकही जागा मिळविणे शक्य झाले नव्हते. २०१२ च्या महापालिका

निवडणूकीमध्ये राजकीय पक्षांना मिळालेल्या जागांची स्थिती पुढील सारणीमध्ये दर्शविण्यात आली आहे. सारणी क्रमांक १ (६)

राजकीय पक्ष मिळालेल्या जागा :

काँग्रेस १८, भाजप १८, शिवसेना ०८, भारिपबहुजनमहासंघ ०७, राष्ट्रवादी काँग्रेस ०५, समाजवादी पक्ष ०१, महाराष्ट्र नवनिर्माण सेना ०१, ऑल इंडिया युनायटेड डेमोक्रेटिक फ्रंट ०२, अकोला विकास आघाडी ०२, २००७ च्या निवडणूकीमध्ये राजकीय पक्षांना मिळालेल्या जागांची स्थिती पुढील सारणीमध्ये दर्शविण्यात आली आहे.

सारणी क्रमांक : २(७) राजकीय पक्ष मिळालेल्या जागा : काँग्रेस १९, राष्ट्रवादी काँग्रेस ११, भाजप ११, शिवसेना ०७, भारिप बहुजन महासंघ १०, मुस्लीम लिग ०१, महाराष्ट्र नवनिर्माण सेना ०१, सेक्युलर पार्टी ०१, समाजवादी पक्ष ०२, लोकजनशक्ती ०२, आझाद हिंद काँग्रेस ०१,


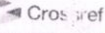



क) जातीसंबंधीची स्थिती:

सन २०१२ मध्ये झालेल्या महापालिका निवडणूकीमध्ये जातीचा विचार करता एकूण २२ जातीचे उमेदवार निवडणूकीमध्ये विजयी झाले होते. यामध्ये मुस्लिम, मराठा - कुणबी, मराठा व मराठा-देशमुख, कलाल, शिंदी, धनगर, टाकलकार, कुंभार, ब्राम्हण, पंजाबी - शीख, गोंड, बौध्द, मारवाडी, गुजर, गोसावी, भनगी, गवळी, साळी, तेली, मातंग, मारवाडी-ब्राम्हण व पवार क्षेत्रीय जातीचा समावेश होतो. उपरोक्त २३ जातींपैकी मुस्लीम जातीचे सर्वाधिक १८ उमेदवार विजयी झाले होते. यामध्ये बहुतांश उमेदवार विविध राजकीय पक्षाचे होते तर बोटावर मोजण्याइतके अपक्ष उमेदवार होते. निवडणूकीमध्ये निवडून आलेल्या मुस्लीम जातीच्या १८ उमेदवारांपैकी ११ उमेदवार एकट्या काँग्रेस पक्षाचे होते. राष्ट्रवादी काँग्रेस पक्षाचे २, युडीएफचे २, समाजवादी पक्षाचा १ व २ अपक्ष उमेदवार होतेमुस्लिम जातीच्या निवडून आलेल्या एकूण उमेदवारांपैकी काँग्रेस पक्षाशी संबंधीत असलेल्या उमेदवारांचे प्रमाण सर्वात जास्त (६१.५०) होते. विशेष म्हणजे काँग्रेस पक्षाच्या निवडून आलेल्या उमेदवारांची संख्या सुद्धा १८ इतकी होती.

यावरून काँग्रेस पक्षाच्या निवडून आलेल्या उमेदवारांमध्ये जातीचा विचार करता मुस्लिम जातीच्या उमेदवाराचे प्रमाण

सर्वाधिक (६१.५०) असल्याचे स्पष्ट होतेमराठा-कुणबी जातीचे मुस्लिम जातीप्रमाणेच एकूण १८ उमेदवार विजयी झाले



Research Paper in Commerce	    
प्र. गुणिल हरीभाऊ पांडे	<p>राखीव निधीचे पत अकोला जिल्हा मध्यवर्ती सहकारी बँकेची महाराष्ट्रातील इतर जिल्हा मध्यवर्ती सहकारी बँकांशी तुलना</p> <p><b>ABSTRACT</b> स्वनिधीचे, राखीव आणि इतर निधी हे महत्त्वपूर्ण घटक आहे. भविष्यामध्ये आर्थिक संकट निर्माण झाल्यास त्याला तोंड देता यावे किंवा भविष्यकालीन विकास कार्याला हातभार लागावा या उद्देशाने वेगवेगळे निधी निर्माण करण्यात आले आहेत. या निधीमुळे संस्थेचा आर्थिक पाया मजबूत होतो आणि दीर्घकालीन आर्थिक स्रोतसुद्धा प्राप्त होतो.</p>
श्री शिवाजी कला, वाणिज्य आणि विज्ञान महाविद्यालय, अकोल	

महाराष्ट्र राज्य सहकारी कायदा १९६० प्रमाणे निव्वळ नफ्याच्या किमान २५ टक्के राखीव निधीला स्थानांतरित करावी लागते. यापेक्षा जास्त राखीव निधीला स्थानांतरित करता येते. निव्वळकाला संस्थेची आर्थिकस्थिती पाहून निव्वळ नफ्याच्या १/४ पेक्षा कमी, परंतु १/१० पेक्षा जास्त राखीव निधीला स्थानांतरित करण्याची परवानगी देता येते. राखीव निधीतील रक्कम राज्य सरकारच्या आदेशाप्रमाणे कलम ७० नुसार गुंतविण्यात येते. व्यवसायामध्ये झालेले नुकसान राखीव निधीतून भरून काढता येते परंतु लाभार्थ वाटप करता येत नाही.

राखीव आणि इतर निधीचे महत्त्व विशद करताना ग्रामीण पतपुरवठा पाहणी समितीने पुढील विधान केले आहे.

"As important as the need for adequate share

capital is that of adequate reserves. We trust, this Will engage from time to time the most careful attention of co-operative departments and of the directors of the central Bank."

राखीव आणि इतर निधीवर व्याज किंवा लाभार्थ द्यावा लागत नसल्यामुळे आर्थिक प्राप्तीचे हे सर्वात स्वस्त स्रोत आहेत. नफ्यातून राखीव आणि इतर निधीची निर्मिती होत असल्यामुळे भागधारकांना लाभार्थ वाटण्यायोग्य शिल्लक राखीव कमी होते.

महाराष्ट्र राज्य सहकारी कायद्याप्रमाणे नफ्यातून लाभार्थ वाटण्यापूर्वी राखीव निधी, कृषी पत स्थायिकरण निधी आणि इतर निधी निर्माण करावे लागतात.

राखीव निधी- तुलनात्मक स्थिती

अ. क्र.	जिल्हा, सहकारी नावे	२०००-२००१	२००१-२००२	२००२-२००३	२००३-२००४	प्रमाण अंशदशक वाढ %	द्वितीय अंशदशक वाढ %	दशक वाढ %
१	अहमदनगर	२५८	२६८	४३३७	४३३७	३२.३८	०.००	१४५६.२६
२	अकोला	४२०	१३५	२३३२	४३७९	२९.८६	९२.०७	५२२.०८
३	अमरावती	९२	१०७	१३०	१३३	१६.३०	६००.५०	९५४.१३
४	औरंगाबाद	२०४	३१४	३३०	४०१	५५.३९	२५.३९	९६.५७
५	भंडारा	१९४	२५९	३६६	६९३	३३.५१	८९.३४	२५४.२२
६	बीड	५२२	३२३	३२३	४२०६	२४.१०	३२.०६	३२९६.७३
७	बुलढाणा	३१०	३५५	३६५	५५३	१४.५२	५३.५९	७८.३९
८	चंद्रपूर	३०९	६५८	६७२	१२५९	६३.०६	८७.३५	२३३.१९
९	छत्रपुर्णे	१७०	२०६	२३०	३५०	२५.५८	९५.६५	१६४.७९
१०	हार्दिकपेठली	३४८	६६३	१००९	२२६९	९०.५२	१२४.८८	५५२.०९
११	होशंगाबाद	१०१	३७९	१०१	९९३	१२५.६८	९४.३२	४८०.७७
१२	जळगाव	५२५	५६२	५७८	६३७	७.८७	१०.२५	२२.२६
१३	जालना	६३	६३	६६	१२३	१.६१	८६.३६	९८.३९

१४	कोल्हापूर	३१०५	३५१५	३८२	४९४७	१३.२०	२९.२७	५९.३२
१५	लातूर	८००	१०९२	२४०३	४९६९	१२४.००	७३.५९	४२५.१३
१६	मुंबई	३५७०	४४२६	४४२६	५२५३	२५.०३	१८.६९	४८.३९
१७	नागपूर	६२२	६८७	७०९	९३५०	१०.४५	९२.५८	११७.००
१८	नांदेड	१२०	१५५	१६५	१६५	२९.१७	०.००	३४.१७
१९	नाशिक	८२४	९५९	९७६	२३४२	१६.३८	१३९.९९	१८४.२२
२०	उस्मानाबाद	१०२५	१७७९	१६८३	३०६२	४४.८६	८९.९४	१९९.९०
२१	पारभणी	१५८	२१६	२३८	३५३	३६.७१	४८.३२	१२३.४२
२२	पुणे	३७९३	५८८८	६४८८	१०४८८	५५.९८	६९.६५	१०६.४३
२३	रायगड (मुलगावा)	८२५	१०१८	११५७	११५७	२२.५०	७९.०५	१२८.१५
२४	रत्नागिरी	९७२	१०७५	११९६	११९६	१०.६०	६०.०३	९६.९५
२५	सांगली	१३५१	१३७०	१३७९	२०४८	१.४१	४८.५१	५१.५९
२६	सातारा	४४३९	५८३४	६०९४	७८८१	३१.४३	२९.३२	७७.५४
२७	सोलापूर	१९१	२८२	३०५४	६६९०	४७.५०	१२५.९९	२४८.८०
२८	स्त्रियुर्गे	५६५	७७७	८५९	१३२७	३०.५२	५४.४८	१३४.८७
२९	ठाणे	३९६५	५५९२	५८३६	८८३९	६४.२५	५१.४६	१७९.६३
३०	वर्धा	१३३	१३९	१३७	१७७	४.५१	२९.२०	३३.०८
३१	यवतमाळ	१७८	३२४	४३४	२६००	८२.०२	४९९.०८	१३६०.६७



सरासरी वाढ	३३६.९८	४९०.६४	९४९.८५	१२६.०९६	४५.९५	३३.८०	२७४.८५
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पूर्वीच्या संशोधन लेखात आपण १९९४-९५ ते २००३-२००४ पर्यंतच्या आकडेवारीचे विश्लेषण केले होते. आता आपण २००४-०५ ते २०१३-१४ पर्यंतच्या आकडेवारीचे विश्लेषण करणार आहोत. खेळत्या भांडवलाचा राखीव निधी हा महत्वाचा घटक आहे. राखीव निधी हा बँकेचा स्वनिधी असतो. शिवाय हा पैसा कर्जाऊ देऊन बँकेच्या लाभक्षमतेमध्ये मोठ्याप्रमाणात वाढ करता येते. पहिल्या अर्धदशकात २४१०.०८% वाढीसह बीड जिल्हा मध्यवर्ती सहकारी बँक आघाडीवर आहे. या तुलनेत इतर बँकांच्या राखीव निधीमध्ये कमी वाढ झाल्याचे दिसत आहे. १०० ते २००% ह्या राखीव निधीच्या वाढ गटात केवळ २ बँकांचा समावेश असून १२४.००% वाढीसह लातूर जिल्हा मध्यवर्ती सहकारी बँक ह्या गटात आघाडीवर आहे. ५० ते १००% ह्या राखीव निधीच्या वाढ गटात सुध्दा केवळ ६ बँका असून या गटात ९०.५२% वाढीसह गडचिरोली जिल्हा मध्यवर्ती सहकारी बँक आघाडीवर आहे. ५०% पेक्षा कमी वाढ गटात एकूण २२ जिल्हा मध्यवर्ती सहकारी बँकांचा समावेश आहे. ह्या गटात ४७.५०% वाढीसह सोलापूर जिल्हा मध्यवर्ती सहकारी बँक आघाडीवर आहे तर पहिल्या अर्धदशकात सर्वात कमी १.४९% शेकडा वाढ दर्शविणारी सांगली जिल्हा मध्यवर्ती सहकारी बँक आहे. अकोला जिल्हा मध्यवर्ती सहकारी बँकेने पहिल्या अर्धदशकात अत्यल्प २९.८६% वाढ नोंदविलेली असून राज्यपातळीवरील ४५.९५% या सरासरी वाढीपेक्षा बरीच कमी आहे. अकोला जि.म.स. बँकेने, पहिल्या अर्धदशकात राखीव निधीच्या वाढी बाबत सुमार कामगिरी नोंदविली आहे.

दुसऱ्या अर्धदशकाच्या राखीव निधीच्या शेकडा वाढीचा विचार केल्यास पहिल्या अर्धदशकाच्या तुलनेत वाढीच्या प्रमाणात मोठ्याप्रमाणात घट झाल्याचे दिसते. दुसऱ्या अर्धदशकात ६७७.५०% वाढीसह अमरावती जिल्हा मध्यवर्ती सहकारी बँक प्रथम स्थानी होती तर ४९९.०८% वाढीसह यवतमाळ जि.म.स.ह. बँक दुसऱ्या क्रमांकावर होती. १०० ते २००% ह्या राखीव निधीच्या वाढ गटात केवळ ३ बँकांचा समावेश असून १३९.९६% वाढीसह नासिक जिल्हा मध्यवर्ती सहकारी बँक ह्या गटात आघाडीवर आहे. ५० ते १००% ह्या राखीव निधीच्या वाढ गटात १५ जिल्हा मध्यवर्ती सहकारी बँकांचा समावेश असून ९५.६५% वाढीसह धुळे जि.म.स.ह. बँक आघाडीवर होती. ५०% पेक्षा कमी वाढ गटात एकूण १० जिल्हा मध्यवर्ती सहकारी बँकांचा समावेश आहे. या वाढ गटात सांगली जिल्हा मध्यवर्ती सहकारी बँक ४८.५१% वाढीसह पुढे आहे. दुसऱ्या अर्धदशकात ००% वाढ नोंदविणारी नांदेड जिल्हा मध्यवर्ती सहकारी बँक वाढीच्या बाबतीत सर्वात पिछाडीवर होती. महाराष्ट्रातील एकूण बँकांपैकी २२ बँकांनी पहिल्या अर्धदशक शेकडा वाढीच्या प्रमाणापेक्षा दुसऱ्या अर्धदशक शेकडा वाढीच्या प्रमाणात वाढ दर्शविली आहे. उर्वरित ९ जि.म.स.बँकांच्या राखीव निधीच्या वाढीच्या शेकडा प्रमाणात मात्र पूर्वीच्या तुलनेत घट झाली आहे. पहिल्या अर्धदशक वाढीपेक्षा दुसऱ्या अर्धदशकात शेकडा

वाढ नोंदविणाऱ्या बँकांची संख्या जास्त जरी असली तरी राज्याच्या पहिल्या अर्धदशक सरासरी शेकडा वाढीपेक्षा दुसऱ्या अर्धदशक सरासरी शेकडा वाढीचे प्रमाण कमी असल्यामुळे बँकांची संख्या जरी वाढली तरी वाढीचे प्रमाण मात्र कमी झाले असल्याचे दिग्दर्शन होत आहे. अकोला जि.म.स. बँकेची राखीव निधीमधील ९२.०७% ही अर्धदशक वाढ राज्यपातळीवरील ३३.८०% आणि याच बँकेच्या पहिल्या अर्धदशक २९.८६% ह्या शेकडा वाढीच्या तुलनेत तिप्पटीपेक्षा थोडी कमी-जास्त आहे. याचा अर्थ बँकेने राखीव निधीच्या शेकडा वाढीच्या प्रमाणात फार मोठी झेप घेतली आहे, ही बाब बँकेच्या प्रगतीच्या दृष्टीने खूप सकारात्मक आहे. राज्याच्या बाबतीत सरासरी वाढीचा विचार केल्यास पहिल्या अर्धदशक ४५.९५% वाढीच्या तुलनेत दुसऱ्या अर्धदशकातील ३३.८०% वाढ ही खूप कमी आहे. साधारण: विकासाचा दर हा वाढता असला पाहिजे. राखीव निधीच्या वाढीच्या प्रमाणात घट होत असल्यास ते बँकेच्या नफ्याचे प्रमाण कमी होत असल्याचे लक्षण आहे. ही स्थिती बँकांच्या भवितव्याच्या दृष्टीने चिंता निर्माण करणारी आहे.

महाराष्ट्रातील एकूण जिल्हा मध्यवर्ती सहकारी बँकांच्या राखीव निधीच्या दशक शेकडा वाढीचा वेग पाहिल्यास ६००% पेक्षा जास्त वाढ नोंदविणाऱ्या ४ जिल्हा मध्यवर्ती सहकारी बँका आहेत. ह्यात बीड जि.म.स. बँक ३२१४.७३% वाढीसह अग्रेसर होती. ४०० ते ६००% ह्या वाढ गटात ४ बँकांचा समावेश असून ५५२.०९% वाढीसह ह्या गटात गडचिरोली जि.म.स.बँक आघाडीवर होती. २०० ते ४००% ह्या सामान्य शेकडा वाढ गटात ३ बँकांचा समावेश असून भंडारा जि.म.स.बँक २५७.२२% वाढीसह ह्या गटात पुढे आहे. राखीव निधीमध्ये २००% पेक्षा कमी वाढ गटात सर्वात जास्त एकूण २० जिल्हा मध्यवर्ती सहकारी बँका समाविष्ट असून १९९.९०% वाढीसह उस्मानाबाद जि.म.स. बँक पुढे होती तर दशकात सर्वात कमी २२.२६% शेकडा वाढीसह जळगांव जि.म.स.ह. बँक सर्वात पिछाडीवर होती.

अकोला जिल्हा मध्यवर्ती सहकारी बँकेची राखीव निधीची ५२२.०८% दशक शेकडा वाढ राज्याच्या सरासरी २७४.८५% शेकडा वाढीच्या जवळपास दुप्पट आहे. राखीव निधीबाबत मोठ्याप्रमाणात झालेली वाढ ही बँकेची लाभक्षमता सुध्दा मोठ्याप्रमाणात वाढल्याचे निदर्शक आहे. राज्यपातळीच्या संदर्भात पहिल्या अर्धदशकाच्या तुलनेत दुसऱ्या अर्धदशकातील वाढ बरीच कमी आहे. ही बाब जिल्हा मध्यवर्ती सहकारी बँकांचे नफ्याचे प्रमाण घटत असल्याचे निदर्शक आहे.

#### निष्कर्ष :-

महाराष्ट्राची राखीव निधी बाबत प्रथम अर्धदशक, द्वितीय अर्धदशक आणि दशक शेकडा वाढ अनुक्रमे ४५.९५%, ३३.८०% आणि २७४.८५% होती तर अकोला जिल्हा मध्यवर्ती सहकारी बँकेची शेकडा वाढ अनुक्रमे २९.८६%, ९२.०७% आणि ५२२.०८% होती. महाराष्ट्राच्या सरासरी शेकडा वाढीच्या तुलनेत पहिल्या अर्धदशक शेकडा वाढीपेक्षा अकोला जिल्हा मध्यवर्ती सहकारी बँकेची वाढ कमी असली



तरी ही कमतरता दुसऱ्या अर्धदशक आणि दशक शेंकडा  
वाढीमध्ये मोठ्याप्रमाणात अकोला जि.म.स. बँकेने भरून  
काढली आहे. ही बाब अकोला जि.म.स. बँकेच्या नफ्याच्या  
प्रमाणात मोठ्याप्रमाणात वाढ होत असल्याचे द्योतक आहे.  
संदर्भ सूची :-

Basic Data on performance of District Central Co-  
operative Banks (Reports: 2004-05, 2008-09,  
2009-2010, 2013-14)  
National Federation of State Co-operative Banks  
Ltd., Vashi, Navi Mumbai - 400703



Research Paper in Commerce	    
<p>प्र. सुनिल हरीभाऊ पांडे</p> <p>श्री शिवाजी कला, वाणिज्य आणि विज्ञान महाविद्यालय, अकोट</p>	<p>एकूण ठेवीबाबत अकोला जिल्हा मध्यवर्ती सहकारी बँकेची महाराष्ट्रातील इतर जिल्हा मध्यवर्ती सहकारी बँकांशी तुलना</p> <p><b>ABSTRACT</b></p> <p>ठेवीद्वारा उभारल्या जाणाऱ्या िाणीचा सामावेश बाह्य लोतामध्ये होतो. जिल्हा मध्यवर्ती सहकारी बँका ठेवीद्वारा मोठ्या प्रमाणावर कार्यकारी मांडवलाची उभारणी करतात. सामान्य लोकांच्या, सहकारी संस्थांच्या तसेच स्थानिक स्वराज्य संस्थांच्या ठेवी स्वीकारणे, सुरक्षित ठेवणे आणि गरजेप्रमाणे परत करणे हे बँकेचे महत्त्वाचे कार्य आहे. कारण मोठ्या प्रमाणावर कर्ज देण्यासाठी बँकांजवळील मांडवल कमी पडते. ही कार्यशील मांडवलाची गरज लोकांकडून ठेवी स्वीकारून पूर्ण केली जाते.</p>

#### ठेवीचे प्रकार

पुढील प्रकारच्या ठेवी बँकेकडून स्वीकारल्याता जातात.

#### १) चालू ठेवी

चालू खात्यामधील रक्कम ठेवीदारास कितीही प्रमाणात आणि कितीही वेळा काढता येते किंवा ठेवता येते. रोजचे व्यवहार जास्त असणाऱ्या व्यक्तींसाठी हे खाते किंवा ठेवी सोयीस्कर असतात तसेच आर्थिक व्यवहार पूर्ण करण्याकरिता जास्त रक्कम जवळ बाळगण्याची आवश्यकता भासत नाही. या खात्यावरील रकमा केव्हाही काढण्याचा अधिकार ठेवीदारास असल्यामुळे या खात्यावरील रक्कम बँक अधिक मुदतीच्या कर्जासाठी वापरू शकत नाही. या खात्यामधील ठेवीवर बँक ठेवीदारास व्याज देत नाही.

#### २) बचत ठेवी

ज्यांचे रोजचे व्यवहार विशेष जास्त नसतात अशा कनिष्ठ व मध्यम वर्गातील लोकांच्या शिल्लक रकमा एकत्रित करण्याच्या उद्देशाने बचत ठेव खाते सुरु करण्यात आले आहे. ठेवीदारांनी मागणी केल्यास बँकेला ह्या खात्यातील रकमा परत कराव्या लागतात. परंतु ह्या खात्यावरील रकमा काढायला बँका मर्यादा घालतात. साधारणतः आठवड्यातून दोनदा रक्कम काढण्याची परवागी बँकेकडून दिली जाते. ह्या खात्यातील ठेवीवर मर्यादित प्रमाणात व्याजसुद्धा दिल्या जाते. लोकांना बचतीची सवय लावण्याच्यादृष्टीने हे बचत ठेव खाते महत्त्वपूर्ण भूमिका बजावते. बचत ठेवी मार्फत लहान-लहान प्रमाणात फार मोठ्या रकमा बँकांजवळ जमा होतात. शिवाय ह्या रकमा एकदम परत कराव्या लागत नसल्यामुळे बँका कर्ज देण्यासाठी या रकमांचा वापर करू शकतात.

#### ३) मुदत ठेवी

मुदत ठेव खात्यामध्ये दहा वर्षांपर्यंतच्या ठेवी ठेवता येतात. मुदत ठेवीच्या स्वरूपात बँकेत पैसे जमा केल्यास ती ठरावीक मुदत पूर्ण झाल्या शिवाय रक्कम ठेवदारास काढता येत नाही तसेच त्या खात्यावर अधिक रक्कम जमा करता येत नाही. ठरावीक मुदतीपर्यंत बँकांना रक्कम परत करावी लागत नसल्यामुळे बँका ह्या पैशाचा वापर अल्प, मध्यम आणि दीर्घ मुदतीच्या कर्ज वाटपासाठी करू शकतात. कोणत्या वेळी किती रक्कम परत करावी लागेल याची जाणीवसुद्धा बँकांना

असते. आर्थिक अडचणीच्या काळात ठेवीदारांना ठेव-पावतीच्या तारणावर कर्जसुद्धा काढता येते. मुदत ठेवीवर ठेवीदारांना इतर ठेव प्रकारापेक्षा जास्त दराने व्याज मिळते. ठेवीच्या पावतीवर ठेवीची मुदत नमूद केल्या जाते. मुदत संपल्यानंतर ठेवीवरील व्याज आपोआप बंद होते.

#### ४) राखीव निधीच्या स्वरूपातील ठेवी

सहकारी संस्था कायद्याप्रमाणे जिल्हा मध्यवर्ती सहकारी बँकांशी संलग्न असणाऱ्या इतर सहकारी संस्थांना आपला राखीव निधी ठेवीच्या स्वरूपात जिल्हा बँकांकडे ठेवावा लागतो. ह्या प्रकारच्या ठेवीवर बँकेकडून संबंधित सहकारी संस्थाना मुदतीप्रमाणे व्याज दिल्या जाते.

#### ५) इतर ठेवी

कर्मचारी भविष्य निर्वाह ठेव, कर्मचारी रोख जमानत रक्कम, कंत्राटदारांच्या सुरक्षा ठेवी आणि इतर कोणत्याही प्रकारात न मोडणाऱ्या ठेवींचा सामावेश इतर ठेवींमध्ये होतो.

#### एकूण ठेवी - तुलनात्मक स्थिती

(रक्कम  
लाखात)

अ. नु. क्र.	जि. म. स. बँकांची नावे	१९९४-९५	१९९५-९६	१९९६-९७	२०००-०१	प्रथम अर्ध शक वाढ %	द्वितीय अर्ध शक वाढ %	दशक वाढ %
१	अहमदनगर	४९३५२	९९८६९	१०४९९८	१८४७२५	१२२.९४	७७.२८	३४६.७९
२	अकोला	९४२९५	२९९५८	३५९३८	६५८८९	१०९.६३	७९.३५	३३०.९९
३	अमरावती	१०८७४	१८७२९	२३८२९	३२९६७	७२.२४	३८.३५	२०३.९७
४	औरंगाबाद	१९७०२	३९९८९	३७३८८	४५०९९	१७३.३६	२०.६०	२८५.३३



५	भंडारा	७३	१४३	१९५	२२०	९५.९	१३.१	२०१
६	बीड	७४	१३८	१८९	३८३	८६.४	१०.२	४१५
७	बुलढाणा	१०	२४१	३२८	५२५	१३२.९	६०.०	४०५
८	चंद्रपूर	१४	१७४	२१९	४६३	८४.७	११.०	३९२
९	छोळे	१४	२७६	३२९	४८४	८५.७	४६.८	२२५
१०	गडचिरोली	३२	५२१	७४९	११७	६२.६	५७.२	२६७
११	गोंदिया	०६	१६४	४८	११७	६२.६	५७.२	२६७
१२	जळगाव	३२	६६९	८०१	१०८	१०६.६	३५.६	२३९
१३	जालना	४३	५०३	५०३	१०४	१४.५	१०.७	१३७
१४	कोल्हापूर	४३	१०२	१४५	१६८	१३.७	१५.६	२९०
१५	लातूर	३५	२३१	२७९	४१६	८७.७	४८.९	२३७
१६	मुंबई	८८	१८५	२०२	२२५	११०.५	११.५	१५५
१७	नागपूर	१०	२४४	३५३	७६४	१३१.९	११६.४	६२२
१८	नांदेड	१५	२६२	३४८	६२९	६४.४	७८.३	२८९
१९	नाशिक	२२	७१३	८४१	१४२	२२४.६	६९.६	५४८
२०	उस्मानाबाद	८२	१६८	२२६	३९८	१०४.७	७६.०	३८४
२१	परभणी	१३	२०८	२४३	३७३	५४.३	५२.८	१७६
२२	पुणे	५६	१५२	१७४	२४८	१७०.०	४२.३	३३८
२३	रायगड (कुलाबा)	१०	२५९	३२१	५३७	१३८.९	६७.३	३९४
२४	रत्नागिरी	१०	२२०	२६६	४२४	१०८.९	५९.१	३०१
२५	सांगली	३६	६०५	६८६	९४७	६६.४	३८.०	१६०

२	सातारा	३३	७२८	८३१	११०	१२०.३	३३.३	२३५
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अ. नु. क्र.	जि. म. स. विकासी नावे	१९९४-९५	१९९८-९९	१९९९-२०००	२००३-२००४	प्रथम अर्ध दशक वाढ %	द्वितीय अर्ध दशक वाढ %	दशक वाढ %
२	सोलापूर	२१७	५५८	७२५	१२६	१५६.५	७४.९	४८.०
२	सिंधुदुर्ग	८२३	१५९	१९०	३५५	९३.६	८६.९	३३.२
२	ठाणे	३९८	६४२	७४२	९६१	६९.२	३२.७	१४.०
३	वर्धा	७९६	१२०	१६६	२४९	५१.२	४९.७	२१.५
३	सोलापूर (INDUS L)	४०८	५३१	४३५	३०	१६.६		
३	यवतमाळ	११३	१७०	२५८	४१०	४९.६	५९.९	२६.५
३	सरासरी वाढ	६२२	१३२	१५९	२३४	११२.५	४७.३	२७.३

कार्यकारी मांडवळ उभारणीमधील ठेवी हा सर्वात मोठा बाह्य स्रोत असून बँका ह्या पैशाचा वापर मोठ्या प्रमाणात कर्ज देण्यासाठी करतात. महाराष्ट्रातील सर्व जिल्हा मध्यवर्ती सहकारी बँकांच्या ठेवीच्या प्रथम अर्धदशकातील शेकडा वाढीचा विचार केल्यास ह्या कालावधीतील ठेवीच्या शेकडा वाढीचे प्रमाण चांगले असल्याचे दिसते. २००% च्या वर ठेवीमध्ये २२४.२०% शेकडा प्रमाण असणारी केवळ नाशिक जिल्हा मध्यवर्ती सहकारी बँक होती. १०० ते २००% दरम्यान वाढ असणाऱ्या १४ जिल्हा मध्यवर्ती सहकारी बँका होत्या, या गटात औरंगाबाद जिल्हा मध्यवर्ती सहकारी बँक १७३.३६% वाढीसह अग्रस्थानी होती. १००% च्या आत वाढ असणाऱ्या १६ जिल्हा मध्यवर्ती सहकारी बँका होत्या, या गटात ९५.९२% वाढीसह भंडारा जिल्हा मध्यवर्ती सहकारी बँक आघाडीवर होती. अकोला जिल्हा मध्यवर्ती सहकारी बँकेने ठेवीच्या शेकडा वाढीच्या संदर्भात पहिल्या अर्धदशकात सामान्य कामगिरी दर्शवित १०९.६३% वाढ नोंदविली आहे, ही वाढ राज्यपातळीवरील सरासरी ११२.५२ % ह्या शेकडा वाढीपेक्षा थोडी कमी आहे.

नंतरच्या अर्धदशकाच्या शेकडा वाढीचा विचार केल्यास एकूण ठेवीच्या वाढीच्या शेकडा प्रमाणात पूर्वीच्या



तुलनेत खूप घट झाल्याचे दिसत आहे. नंतरच्या पाच वर्षांमध्ये केवळ ४ बँकांनी एकूण ठेवीमध्ये १००% च्यावर शकडा वाढ नोंदविली आहे, पहिल्या अर्धदशकामध्ये मात्र या वाढ गटामध्ये असणाऱ्या बँकांच्या तुलनेत ही संख्या अतिशय कमी आहे. ५०-१००% च्या दरम्यान वाढ नोंदविणाऱ्या बँकांच्या गटात १३ जिल्हा मध्यवर्ती सहकारी बँकांचा समावेश आहे तर १३ बँकांची एकूण ठेवीमधील शकडा वाढ ५०% च्या आत आहे. पहिल्या अर्धदशकामध्ये ५० ते १००% च्या आत एकूण ठेवीमध्ये शकडा वाढ दर्शविणाऱ्या १३ जिल्हा मध्यवर्ती सहकारी बँका होत्या तर केवळ ३ बँकांचीच एकूण ठेवीमधील शकडा वाढ ५०% च्या आत आहे. पूर्वीच्या अर्धदशकाच्या तुलनेत महाराष्ट्रातील एकूण बँकांपैकी केवळ ५ बँकांनीच पूर्वीच्या अर्धदशकातील ठेवीच्या शकडा वाढीच्या तुलनेत जास्त वाढ दर्शविली असून यापैकी जालना जिल्हा मध्यवर्ती सहकारी बँकेने एकूण ठेवीमध्ये मोठ्या प्रमाणात शकडा वाढ नोंदविली आहे. दुसऱ्या पाच वर्षांतील कालावधीमध्ये नागपूर जिल्हा मध्यवर्ती सहकारी बँकेने एकूण ठेवीमध्ये सर्वात जास्त ११६.४७% शकडा वाढ नोंदविली आहे तर मुंबई जिल्हा मध्यवर्ती सहकारी बँकेची ११.५२% शकडा वाढ ही सर्वात कमी आहे. अकोला जिल्हा मध्यवर्ती सहकारी बँकेची एकूण ठेवीमधील ७१.३५% शकडा वाढ राज्यपातळीवरील ४७.३४% ह्या शकडा वाढीपेक्षा चांगली आहे मात्र पूर्वीच्या अर्धदशकातील या बँकेच्या वाढीच्या तुलनेत कमी आहे. पण एकंदरीत सर्वच जिल्हा मध्यवर्ती सहकारी बँकांच्या ह्या अर्धदशकातील एकूण ठेवीच्या संदर्भातील वाटचाल पाहता अकोला जिल्हा मध्यवर्ती सहकारी बँकेची परिस्थिती समाधानकारक असल्याचे दिसते. राज्यपातळीचा विचार केल्यास पहिल्या अर्धदशकातील एकूण ठेवीची ११२.५२% वाढीच्या तुलनेत या अर्धदशकातील ४७.३४% शकडा वाढ ही अत्यंत कमी असल्याचे जाणवते एकूण ठेवीच्या बाबतीत पहिल्या आणि दुसऱ्या अर्धदशकाची वरील तुलना पाहिल्यास महाराष्ट्रातील जिल्हा मध्यवर्ती सहकारी बँकांची स्थिती अत्यंत वाईट असल्याचे सार्वत्रिक चित्र आहे. बँकेच्या विकासाच्या दृष्टीने ठेवीमध्ये सतत वाढ होत राहणे अत्यावश्यक आहे.

राज्यातील जिल्हा मध्यवर्ती सहकारी बँकांच्या एकूण ठेवीच्या दशक शकडा वाढीचा वेग पाहिल्यास ४००% च्या वर शकडा वाढ नोंदविणाऱ्या ५ बँका असून नागपूर जिल्हा मध्यवर्ती सहकारी बँक ही ६२२.५४% वाढीसह आघाडीवर आहे. ३०० ते ४००% च्या दरम्यान एकूण ठेवीमध्ये शकडा वाढ असणाऱ्या एकूण ८ बँका आहेत. या गटात ३९४.८४% वाढीसह रायगड जिल्हा मध्यवर्ती सहकारी बँक ही आघाडीवर आहे. २०० ते ३००% ह्या सामान्य शकडा वाढ गटात १२ बँकांचा समावेश असून या गटात कोल्हापूर जिल्हा मध्यवर्ती

सहकारी बँक २९०.७८% वाढीसह आघाडीवर आहे. १०० ते २००% ह्या त्यामागणे कमी शकडा वाढ दर्शविणाऱ्या गटात पाच बँकांचा समावेश असून या गटात सर्वात जास्त १७६.८६ शकडा वाढ परभणी जिल्हा मध्यवर्ती सहकारी बँकेने दर्शविली आहे. महाराष्ट्रातील सर्वच जिल्हा मध्यवर्ती सहकारी बँकांमध्ये दशक शकडा वाढीबाबत जालना जिल्हा मध्यवर्ती सहकारी बँकेने १३७.३७% वाढीसह निव्व्यांक गाठला आहे. अकोला जिल्हा मध्यवर्ती सहकारी बँकेची एकूण ठेवीची दशक शकडा वाढ ३३०.९१% असून ही वाढ राज्याच्या २७३.३३% ह्या सरासरी शकडा वाढीपेक्षा जास्त असल्यामुळे ह्या बँकेची ठेवीच्या वाढीची गती जास्त आहे, ही बँकेच्यादृष्टीने सकारात्मक बाब आहे. राज्यपातळीवरील पहिल्या आणि दुसऱ्या सरासरी अर्धदशक शकडा वाढीची तुलना केल्यास नंतरच्या अर्धदशकाच्या तुलनेत एकूण ठेवीच्याबाबत आधीच्या अर्धदशकातील शकडा वाढ तीव्र होती. दुसऱ्या अर्धदशकातील एकूण ठेवीच्या शकडा वाढीमध्ये आलेली सुस्ती जिल्हा मध्यवर्ती सहकारी बँकेच्या खेळत्या भांडवलामध्ये तूट निर्माण करून बँकांच्या विकासावर प्रतिकूल परिणाम करणारी आहे.

#### निष्कर्ष :-

राज्यातील जि.म.स. बँकांच्या सरासरी ठेवीची प्रथम अर्धदशक, द्वितीय अर्धदशक आणि दशक शकडा वाढ अनुक्रमे ११२.५२%, ४७.३४% आणि २७७.३३% होती तर अकोला जिल्हा बँकेची शकडा वाढ अनुक्रमे १०९.६३%, ७१.३५% आणि ३३०.९१% होती. राज्यपातळी आणि अकोला जि.म.स. बँकेची ठेवीची दुसऱ्या अर्धदशकातील शकडा वाढ पहिल्या अर्धदशकातील वाढीपेक्षा बरीच कमी आहे, ही बाब जिल्हा मध्यवर्ती सहकारी बँकांच्या विकासाच्या दृष्टीने मारक आहे. अकोला जि.म.स. बँकेची राज्यपातळीच्या तुलनेत पहिल्या अर्धदशकातील शकडा वाढ थोडी कमी असली तरी द्वितीय अर्धदशक आणि दशक शकडा वाढ मात्र राज्यपातळीच्या तुलनेत बरीच जास्त असणे ही जमेची बाजू आहे पण पहिल्या अर्धदशकाच्या तुलनेत दुसऱ्या अर्धदशकातील शकडा वाढ मात्र बरीच कमी आहे.

#### संदर्भ सूची :-

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