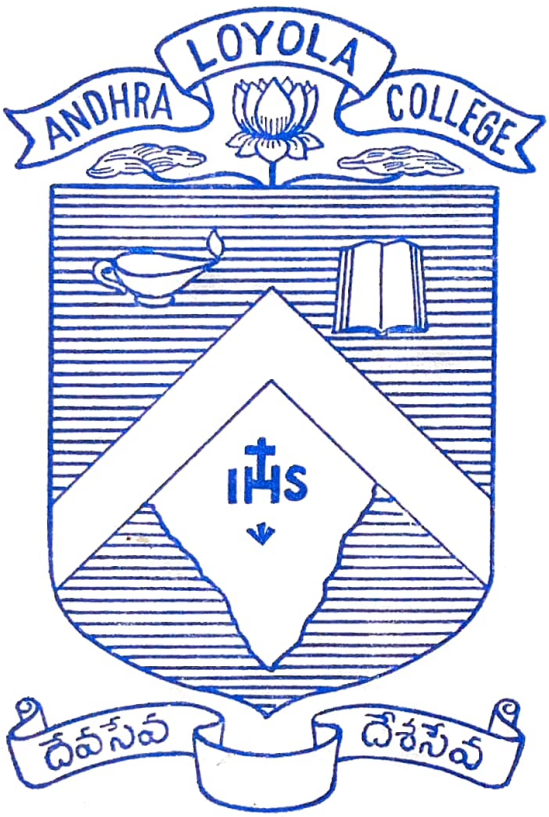
Andhra Loyola College

March 1969



Magazine

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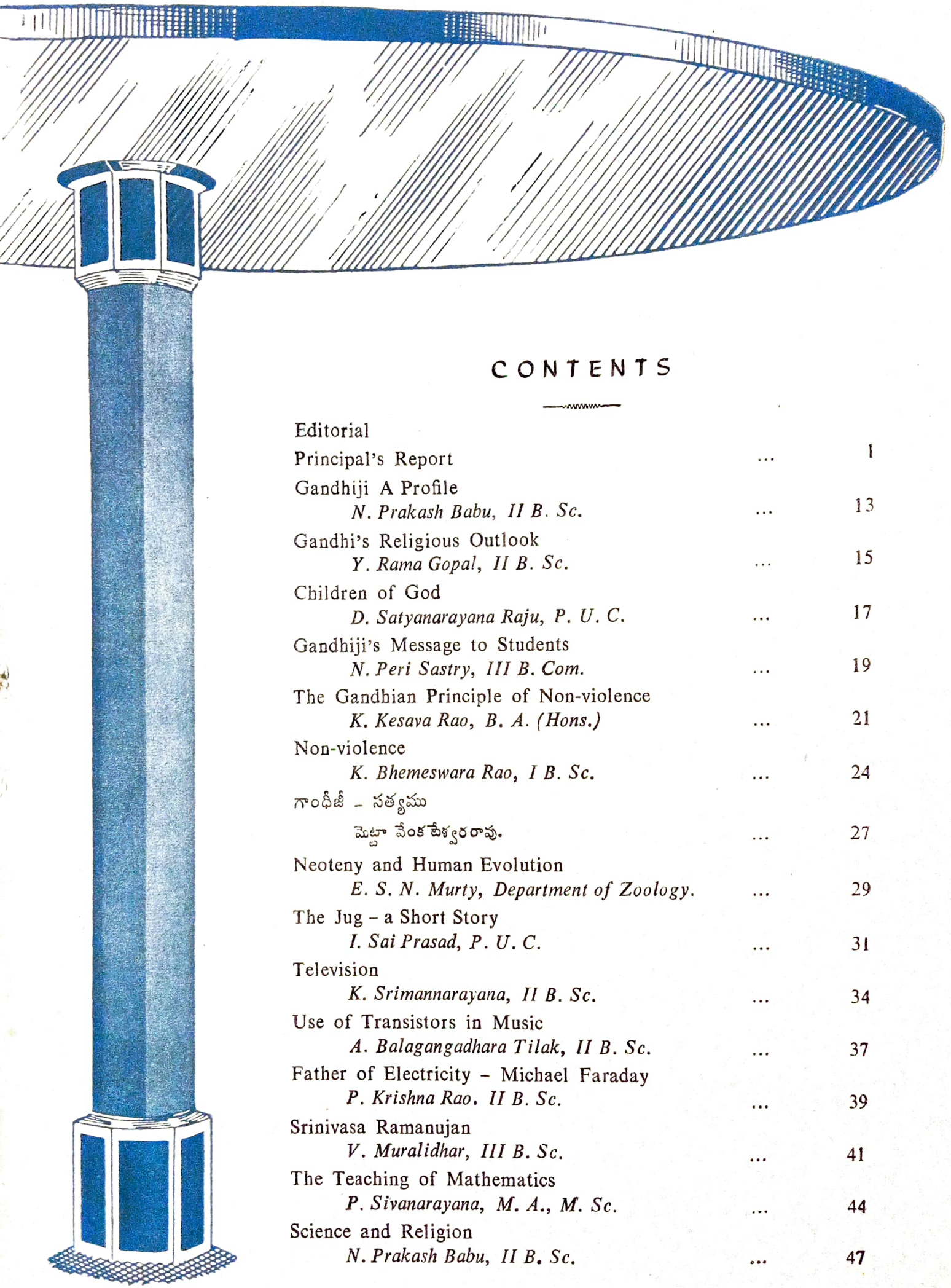

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Cover: The function of education — to bring the light of knowledge and its rewards to youth. Drawing by A. V. Subba Rao, Nalanda Artists.

. . . We, the Editors, wish to express our gratitude to the Staff and Students for their enthusiastic co-operation in contributing to this Annual Magazine. This enthusiasm and generosity on the part of one and all has made the work of editing this Magazine largely a labour of love.

A new feature this year is that there are on the Editorial Board two Student Editors, Messrs. [redacted]. Arun Kumar Sing and Y. Rama Gopal. They have done yeoman service in the production of this Magazine, and we hope that more like them will come forward and lend us their assistance.

We owe our special thanks to M/s. Swatantra Art Printers, for the most personal interest they have taken in our Magazine. Their constant personal attention to detail and their thoroughness have made this Magazine possible. [redacted] Their constant endeavour has been to give satisfaction.

Thank You!!!

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EDITORIAL

It is now fifteen years since this college was opened for the education and formation of the young men of Andhra so that they could take their rightful place in society and help achieve the ideals of our democracy. This year is the centenary of the birth of Mahatma Gandhi, the father of the nation who laid the cornerstone of Indian democracy and set its aims and ideals. It is perhaps opportune to take a good look at the present situation in the light of those aims and ideals.

Mahatma Gandhi has come down to the present generation as a legend – a man who lived up to his ideals. His ideals are not questioned, but their relevance in the context of the modern world is considered a very moot point. Non-violence is all very well as an ideal, but that would not have stopped the Chinese or the Pakistani aggressions of 1962. Village uplift and Swadeshi are excellent, but it is industry that brings home the gravy. It is not only the accidentals that are in question; it is the very fundamental principles and truths of Gandhi's teaching that are rejected, the eternal things like truth and non-violence. So it all boils down to this: Mahatma Gandhi was most successful in getting us our independence from the British, but as a defence strategist or an economist he was too much of a visionary; today his ideals are of no help to face the hard facts of life. Consequently we reserve the right to pick and choose those ideals which we find convenient today, and to water down or discard the rest.

No one can deny that Gandhi knew India. He knew her in his heart and in his soul; he knew her in his feet which trudged so many hundreds of miles of her length and breadth; he knew her in his eyes which had seen her in the faces of so many millions of her poor villagers; he knew her in his hands with which he moulded her weakness into strength against her oppressor; he knew her gentleness in his spirit which formulated

the imperishable truth of non-violence. Out of the depth of his understanding of his Mother India he shaped the means that would help her most. And help her they did – as far as they were used. Who can dare to say that they would have failed if they had been adopted in their entirety ?

Quite apart from anything so material as non-violence and village uplift, Gandhiji stood and still stands as a symbol of public purity. In his *DISCOVERY OF INDIA*, Jawaharlal Nehru describes vividly the quagmire of economic and cultural slavery in which India and Indians found themselves in the thirties. "And then Gandhi came.... The essence of his teaching was fearlessness and truth.... The greatest gift for an individual or a nation is *abhaya* (fearlessness).... Gandhi was always there as a symbol of uncompromising truth to pull us up and shame us into truth." He accepted nothing that did not measure up to the yardstick of truth. His whole life was ruled by truth, and when he came to write his autobiography he called it *The story of My Experiments With Truth.* Alas, public purity has now fallen on evil days. Our public men and leaders today do not scruple to sacrifice principle to expediency, as when they switch parties to secure ministerial posts, or urge students to strike when it suits their book. Truth also falls by the way when it is inconvenient. Compromise has become the order of the day and expediency is king. Is Indian democracy any the better because Gandhiji gently rocked its cradle ?

Nor did Gandhiji forget the Indian student. Indeed, it was always a matter of concern to him that the youth of our country should prepare themselves to take their proper place in the democracy to which he had devoted his life. Consequently, all aspects of the education and formation of youth to serve the country were his constant preoccupation. "Purity of personal life is the indispensable condition for building a sound education," he said. Again, "All your scholarship, all your study of Shakespeare and Wordsworth would be vain if at the same time you do not build your character, and thus attain mastery over your thoughts and actions." "Real education consists in drawing the best out of yourself." His sayings on the subject are legion, and they were all the fruit of his own

experience and his personal conviction. They all add up to an resounding proclamation of the duties of students to strive to achieve the discipline, the culture, the learning, the uprightness that alone can bring honour to the individual and strength to the nation.

Without discipline, students lack the sense of direction which leads to academic achievcment. Without culture, students lack that refinement that is the hallmark of a citizen and a gentleman. Culture, Gandhiji insisted, is not something that comes automatically; it is that inner force which is reflected in speech and conduct and in the many details of daily life we call amenities; they make life more pleasant to those we deal with. If students do not pursue knowledge and learning, they neglect the very purpose for which they seek an education. Uprightness is a steadfast adherence to the truth, and its acquisition is the fruit of a lifetime of following the still small voice of conscience. More than this, Gandhji said explicity that when students dabble in power politics they cease to be students and will, therefore, fail to serve the country in its crisis.

The years of study in college are a time of comparative peace and quiet, a sheltered existence. Deliberately so. Long periods are needed for oaks to grow from saplings into sturdy trees, so too is time needed for youth to mature in wisdom and knowledge. The habit of study is the fruit of long and continued application, and the subject of study needs time for assimilation. The speed of modern life is not conductive to study and reflection. Therefore it is necessary to withdraw from the turmoil in order to fulfil the longings and aspirations of youth. If the world is brought completely into college, there perishes every ideal of education. To train the body to its best; to prepare the intellect to spin the gossamers as well as forge the anchors of the mind; to store the mind with a knowledge of the great and fundmental truths of nature; to develop a strong moral sense – all these fruits of seclusion and concentration are possible only when students join wholeheartedly in the efforts of their teachers to achieve the ideals that inspire them. This is what calls for Gandhiji's celebrated

personal purity. That purity of life, that purity of intention, can achieve wonders. It achieved our freedom, didn't it? His strength was as the strength of a whole nation because his heart was pure and all-embracing in its love.

Perhaps this sounds like ivory-towered idealism, and all work and no play to boot, and such a programme can have little appeal to youth with all its boundless energy and enthusiasm. Gandhiji himself felt that students have a splendid opportunity of falsifying the charge that we are good at oratorical displays and fruitless momentary demonstrations, but fail to do anything constructive. As a constructive national activity he suggested that students devote the whole of their vacations to Village service. This will enable them to study the condition of the Village folk, and befriend them, and conduct classes and other activities, to bring to them the amenities of civilized modern life. The Government now intends to make the N. C. C. optional and instead start a National Service Crops for the purpose. Here is an excellent channel for the energy and enthusiasm of youth. It would be a great shame if Indian youth did nothing in this line while American Peace Corps workers, coming from more than seven thousand miles away and from a different cultural milieu, earn the glory of helping the poor folk whom our own Indian youth have not even dreamt of helping. Thousands of foreign youth are learning life at first hand, and enriching their spirit as well, by helping our poor villagers to live better. Do we mean to say that Americans alone are capable of such generosity and that Indians are too poor in spirit to undertake work which needs courage and stamina? India has in the past impoverished herself by exporting her finest treasures. She gave birth to Buddha: now millions follow him abroad, a mere handful in India. India nutured Gandhi. Are we now to yield the pride or place to his followers in the United States and Africa, while we content ourselves with mere lip-service to his tenets in India? Is the prophet to be without honour in his own country?

Principal's Report

Mr. President, Ladies and Gentlemen,*

I have great pleasure in placing before you the Annual Report of Andhra Loyola College for the academic year 1967–68, the fourteenth since its foundation. It was another quiet year for us, of steady work, interspersed with the usual extra-curricular activities, which relieve the daily routine of its inevitable boredom.

The time of admissions proved as trying as ever. Till recently it was the Pre-University admissions that were a headache, but, with the glamour gone out of the engineering course, the admissions to B. Sc. and B. Com. are becoming increasingly difficult. I try to accommodate all our own students who have been able to secure a first or second class in the Pre-University examination, but it is impossible to give all the third class candidates the group of their choice, to their utter disappointment. Next year, with inevitably reduced admissions into Pre-University and the first year Intermediate, the number of the disappointed will be much larger.

Of changes in the staff I have happily little to report for the year in quetion : the additions to the religious staff of Frs. Mathew Kadavil and Alphonse Miranda were anticipated in last year's report. They have become so much part and parcel of the institution, the one as Vice-Principal, the other as Assistant Warden of the hostel, that it is hard to believe they were new last year. Continuing the practice of anticipation, I should mention the addition of Fr. Rajaiah to the staff this year. Since he holds the M. A. degree in Sociology of the University of Bombay, we have profited from his presence to start the degree course in Sociology in a new combination of Economics, Politics and Sociology, which has been introduced for the first time in the Andhra University. Besides being Assistant Warden of the New Hostel, Fr. Rajaiah with youthful energy looks after a myriad other works of greater and less importance. We are particulary happy to have a Father in the community whose mother tongue is Telugu.

Changes among the lay staff were few last year and confined to tutors and demonstrators. The situation changed completely with the reopening this year. A number of new colleges were started in the University area, mostly in Guntur District, and they began to look around for seasoned teachers to head their departments. Not surprisingly they cast their covetous eyes on some of our seniormost lecturers. Mr. V. V. Krishna Rao, Head of the Physics Department and doyen of our lay staff, has become Principal of C.R.

* Mr. L. Bullaiah, Vice-Chancellor of Andhra University, was to have presided over College Day, which had to be postponed, owing to political agitation.

College, Chilakalurpet. Mr. A. V. Subba Rao, Senior Lecturer in Chemistry, has become Head of the Department in the same college. Mr. N. G. Prasada Rao, popular lecturer in Telugu, has become Head of the Telugu Department in J. K. C. College, Guntur, and Mr. E. Bhaskara Rao, Head of the Zoology Department in the same college. Mr. G. Pulla Reddy, Lecturer in Chemistry, has joined the staff of V. V. N. College, Amaravati. I wish to place on record our deep sense of gratitude to these dedicated teachers who gave of their best during the years they served this institution. Our good wishes follow them in their new positions and we hope their presence in the young colleges will help to cement ties of friendship between them and Andhra Loyola.

In their place we have promoted the following tried tutors and demonstrators on our staff to lecturers: Messrs. S. Venkatappa Rao in Physics, P. B. Ananda Raju and D. Krishna Prasad in Chemistry, K. Purnachandra Rao in Telugu, and B. S. M. Suresh Babu in Zoology. To cope with additional lecturing work Messrs. E. Gabriel and D. Lakshmana Rao were promoted to lectureship in Zoology and Botany respectively. I must say I was pleasantly surprised to note how smoothly the various departments mentioned absorbed the shock of the loss of seasoned lecturers and were able to supply able substitutes at a moment's notice. That is due to our policy of appointing as tutors and demonstrators candidates fully qulified to be lecturers, who can take up lecturing work at short notice. The vacancies created were filled by such qualified candidates: Messrs. G. Anjaiah in Physics, K. V. A. Rama Sastry and B. V. Subrahmanya Sastry in Chemistry, B. Krupanandam in Zoology, M. V. Narayana Reddy in English, G. Subrahmanyam in Telugu, and M. Prakasa Rao in Economics. A gratifying feature of these promotions and appointments is that more than half of the teachers concerned are our Old Boys, who return to us after distinguishing themselves in post-graduate courses.

I may be allowed now to give a brief analysis of the results of the university examinations of April, 1968, which remain the only yardstick to measure academic achivement. On the whole they were up to our usual standard, with a slight improvement here and a little backsliding there. The Pre-University maintained the percentage scored last year : 87·5% (compared to the university percentage of 37) with more first and second classes: 219 firsts (nearly one third of all the firsts in the university) and 156 seconds. D. Venkatramaiah is the winner of a university prize : the Palukuru Nookaraju Memorial Prize, for standing first in Part III with Biological Sciences as one of the optional subjects.

The results in B. A. and B. Sc. were a little better than last year and in B. Com. slightly worse. B. Sc. scored 84% of passes (University percentage 39) with 35 first classes and 74 seconds. The Biology group was best with 88%. B. A. improved slightly over last year with 57% passes (University percentage 34) and only one second class; but this candidate, M. Soundararajan, scored a double second class, i. e., in both Parts I and II, which is very creditable in B. A. B. Com. came out with 71% passes (University percentage 34), one first class and eleven seconds. It is a consolation, however, to learn that C. Bala Siva Subrahmanyam, our solitary first, is the winner of a University prize, the Dr. V. K. Rao and Smt. V. Venkataratnamma Prize, for obtaining the highest number of marks in Part II.

As I pointed out last year English continues to be a bugbear for our students in all classes. In the Pre-University examination 71 failed in English, 29 in English alone, while 37 needed to be moderated in English in order to pass. In the second year degree examination only 70% passed in Part I English. We are seriously thinking of introducing next year the Bridge Course worked out by the British Council for an intense coaching in English for a few weeks, before students begin their university course. Even with the introduction of Telugu as medium along with the two year Intermediate course next year, a working knowledge of English will always be necessary for all at university level, at least for the purpose of intelligent reading.

A large number of our students was awarded scholarships during the year 1967-68 : 72 enjoyed National Merit Scholarships and 203 National Loan Scholarships. Besides these there were State and Central Government Social Welfare Scholarships, 182 and 47 respectively, and several other merit and welfare scholarships. In all 629 students were awarded scholarships to the extent of Rs. 2,87,000/-. Over and above fee concessions were awarded to 1060 students, amounting to Rs. 1,18,655/- Add to these Students' Aid from the University Grants Commission and Management Concessions to make a grand total of well over Rs. 4 lakhs. I give these figures so that both the public and the students themselves may have an idea of what higher education costs the nation, so that we may all endeavour to get the best return out of it. If I have any criticism to offer it is that the means test for fee concessions should be supplemented by a merit qualification also, lest money be wasted on underserving students.

Last year (1967-68) was an unusually successful year for the college in games and sports. The college teams emerged university champions in Cricket, Hockey, Volley-ball, Kho-kho and Table-Tennis, and runners-up in Basket-ball and Tennis. The Cricket coaching camp conducted for 3 weeks by Sri R V. S. Rama Rao, N. I. S. Cricket Coach, proved a great help not only for last year's team but also for this year's because G. Singaiah, this year's Captain has turned out to be an excellent cricket coach himself. Many of our students were selected for University and State teams. G. Singaiah was selected both for the Andhra State team for the Ranji Trophy tournament and for the Andhra University Cricket team, of which he was also Captain. H. Ramaswamy, N. Bose Babu and J. Narendranath were chosen both for the Andhra State Junior Cricket team and the Andhra University Cricket team, while D. G. K. Varma was selected for the Andhra University team, with S. Ramana as stand-by. P. Bhimeswara Rao and N. Samuel Prasad were selected to represent the University in Hockey, while K. Vasudeva Rao, M. George and Y. Gopichand were chosen for the University Kho-Kho team, of which Vasudeva Rao was appointed Captain. I do not mention the many matches in which our teams took part except to say that our cricket team won the Vijayawada League tournament and our Kho-Kho team the Krishna District tournament. I am afraid these spectacular successes are not going to be repeated this year, except perhaps by the Cricket team, because many seasoned players left the college at the end of the year so that many of the teams have to be built up again from scratch.

Our boys have been doing well also in Debating and Elocution Competitions. At the College Students Conference

organised by the Nehru-Kennedy Cultural Association the first prize both in Elocution and in Mono-acting was won by Anoop Ambrose. At the Inter-Collegiate English Elocution Contest held at the Andhra Jateeya Kalasala, Machilipatnam, our debating team, consisting of H. Devarajan and D. G. K. Varma won the shield for the third time in succession and the former won the cup for the best speaker. Our dramatic team which was preparing for the Inter-Collegiate Dramatic Contest was sorely disappointed when the contest was cancelled for the second year.

The Students' Society conducted elections in July as usual. S. N. Chatterjee was elected Chairman and J. Narendranath Secretary. The inaugural was delivered by Mrs. Lalitha, Senior Lecturer in English, Maris Stella College, and the Valedictory by Sri A. Satyanarayana, Principal of S. R. R. & C. V. R. Government College. In between were a number of meetings and debates. The most noteworthy were a debate on the medium of instruction at which many were found to speak in favour of English and only a few for Telugu; another debate on the failure of Indian democracy to deliver the goods; a symposium on National Development spread over two days to coincide with the UNCTAD meeting in Delhi, and several Quiz Programmes, conducted by the Mathematics and Science Association and the Planning Forum. For a busy and highly successful year, in spite of student agitation all round us during almost two terms, I have to thank the college teaching staff, the association office bearers, and the students themselves for their robust common-sense. A word of praise is due to Chairman S. N. Chatterjee in particular who showed himself prudent, tactful, sensible and loyal, while retaining the confidence of students and teachers alike. He proved that a student leader can be popular and conscientious at the same time and I have no hesitation in recommending him as a model to future office-bearers.

The N. C. C. continued its usual activities on what seemed to be a reduced tempo. During the summer seven senior infantry cadets were attached to regular army units for a month at Gwalior and Babina. Two others attended the summer training camp at Kodaikanal. In the shooting competition at Secunderabad our cadets won the Burdwan Trophy. The annual Infantry camp at Nambur was restricted to I Year cadets only owing to scarcity of funds. Capt. M. D. Ambrose Ananda Rao was promoted to the rank of acting Major. The sustained successes of our infantry battalion is largely due to his unflagging enthusiasm. Our Air Wing cadets have kept up the high standard of that wing's performance. One cadet attended the National Nau Sainik Camp at Bangalore; two others competed in the All India Aero-modelling Rally held in Calcutta; yet another cadet, Sgt. Joseph Anselm, was selected for the Republic Day Parade in Delhi, the only one from Vijayawada. At the combined annual training camp, held at Gannavaram this year, attended by squadrons from all the universities of the State, our cadets came first in discipline, kit layout, and drill. The Navy Wing was second to none. Six cadets were selected for the Nau Sainik camp at Bangalore mentioned already; two others attended the summer cruise on I. N. S. Betwa, sailing from Bombay to Cochin, and were able to witness naval manoeuvres by all kinds of warships including a submarine. At the annual camp at Narsapur our cadets won first prize for "turn-out" and second prize in boat-pulling.

There is a proposal, which I understand will be implemented next year, of making the N. C. C. voluntary again, and introducing two other schemes the National Service Corps and the National Sports Organisation for those who wish to take up social service instead, or are good at games and sports. I welcome this innovation for several reasons. First, because it removes the element of compulsion to a great extent. The efficiency of the N.C.C. has been lowered by enforcing the enrolment of students who had neither the capacity nor the will to join it. Secondly, social service is a peculiarly suitable activity for students and, if properly conducted, will give them that social outlook which is so necessary for the educated and privileged members of Indian society. Finally, the standard of games and athletics, which is low in the Andhra University, in spite of the good material available, will receive a filip from an organisation devoted entirely to that purpose. My only fear is that bureaucratic red tape will tie up these organisations in futility and inertia. The near defeat of my attempts to start this year a pilot scheme in this college of the National Service Corps is a bad omen.

Next year will also witness a radical change in the system of higher education in this state, which does not seem to have attracted the attention of the general public, apparently unaware of its implications. The introduction of the two year intermediate course has already reduced the high school course by one year to a span of ten years. It will lengthen the college course also by one year making it five in all, a two year intermediate course followed by a three year degree course. The syllabuses for the intermediate course are sought to be entirely revised, updating them, and increasing the content, in order to raise the standard. Simultaneously the medium of instruction is to be changed from English to Telugu, entailing the writing and publishing of entirely new text-books in the regional language. In succeeding years the Telugu medium will be introduced in the degree classes also, where the syllabuses must in turn be upgraded and the courses reconstituted, to serve as a logical continuation of the intermediate course.

The whole scheme looks fine in theory but the unfortuante snag in its implementation is that it has not been adequately prepared for. The syllabuses have been drawn up rather hurriedly by improvised committees chaired by university professors, who know little of what is done or can be done at preuniversity level, and finalised only three months ago, without reference to expert bodies like the Academic Councils or Boards of Universities. The text-books are being feverishly commissioned at the moment and, after being written in English and, I trust, properly scrutinised, must be done into Telugu. After the translations are approved, they will have to be printed in bulk and be ready for distribution at the beginning of July. Anyone with the least experience of writing and publishing will conclude that such a hasty venture is not going to succeed.

A second m terial difficulty arises from the lack of accommodation and equipment in the existing colleges. If they have been found fault with on precisely these grounds in regard to their present strength, how are they going to serve an additional 45,000 students who will be let loose on them next year? The starting of junior colleges with poorer accommodation and equipment and less experience, if any, of conducting college classes, is not going to improve the situation. It has been suggested that the shift system be introduced in the colleges.

This will turn them into market-places or factories, carrying an atmosphere that can only breed indiscipline.

These are but the material difficulties we shall have to face. Has any realistic reckoning been made regarding the teaching staff to man these additional classes and institutions? The managements of colleges are aware of the dearth of qualified persons to teach the existing classes and courses, and the continual need to approach the University for exemption to employ unqualified personnel. How will it be possible almost overnight to find the hundreds of additional teachers with the high post-graduate qualifications prescribed?

I do not wish to sound alarmist, but it needs no gift of prophecy to foretell that this reorganisation, intended to solve problems and raise standards, will instead raise problems and dissolve standards. I fear there will result only greater frustration after the expenditure of much money and energy.

Not to appear merely destructive in my criticism I venture to suggest the following measures, which I have also heard proposed by people experienced both in teaching and administration. The changes which are contemplated are in themselves good and, if properly conducted, can improve matters, but only if they are introduced in a gradual or phased manner, suited to the capacity of the existing educational system to absorb them. We cannot alter radically the content of syllabuses and change the medium of instruction at the same time. If it is felt that the regional language must be introduced at once, let it be done, adopting the syllabuses of the college courses much as they stand today, i. e., the existing Pre-University syllabus with the addition of something from the first year of the degree course. Existing English text-books can continue in use, done into Telugu as soon as conveniently possible. After a couple of years, when things have settled down with the new medium of instruction, revised syllabuses, based on recent advances in teaching the sciences and other subjects, can be drawn up and new text-books written. The delay of two years or so will give the breathing space necessary to do this important work thoroughly to everybody's satisfaction. What is being done now in breathless haste will, I fear, satisfy nobody.

I have merely touched upon this thorny problem, which obviously cannot be dealt with exhaustively in a college day report. The matter, however, is of such paramount importance that I think public airing of the question is called for.

The new building housing Library and Reading Rooms has been completed and we intend to shift the books there during the summer vacation Our present stock of library books is nearly 30,000 volumes and merited special commendation by the General Inspection Commission of the Andhra University which visited the college in 1962–63. Since then a few thousand volumes have been added. The library would seem to be put to fairly good use since 80 volumes on an average are issued each day; but this is a small number compared to the strength of the college: 1800 students, besides 100 members of the staff. With the introduction of Telugu as medium of instruction, this figure is sure to decline.

A third hostel is rapidly rising opposite the college Church and we hope at least one third of it will be ready for the reopening in July 1969. It will go far to relieve the expected pressure for admission into the hostels consequent on

the introduction of the two year intermediate course.

Building is prohibitively expensive nowadays; more so that no government grants are available for building purposes. The University Grants Commission has given us a grant of Rs. 61,000/- for the library which covers a third of its cost. No grant can be expected for the hostel. On the contrary even Teaching Grants to enable the colleges to pay salaries of teachers are not released in time or on a sufficient scale to meet commitments. I do not know if the public is aware of the plight of private managements all over the state, who are living literally a hand to mouth existence. We are required to pay IV Plan U. G. C. scales to all our teaching staff; and we are expected at the same time to give large fee concessions according to Government rules. The difference between expenditure and income is to be met by ad hoc grants every quarter; but the gap is never closed.

To make the situation clear I give the relevant figures for the past two years. In 1967–68 the salaries bill was Rs. 5,60,000/- and the expenditure on Provident Fund and Contingencies nearly Rs. 20,000/-, making a total expenditure of Rs. 5,80,000/- The tuition fees collected amounted to Rs. 2,32,000/- and the Teaching Grant received for the year was Rs. 2,76,000/-, making a total income of Rs. 5,08,000/-. The deficit of Rs. 72,000/- has not been made good up to date. During 1968–69 up to 31st December 1968 the salaries paid amounted to Rs. 5,00,000/-, Contingencies and Provident Fund to Rs.16,000/-, making a total expenditure of Rs.5,16,000/-. Against this the tuition fee collection was Rs. 1,81,000/- and the Teaching Grants received Rs. 2,20,000/-, making a total of Rs. 4,01,000/-. The net deficit so far of over Rs. 1 lakh has been borne by the management. Over and above this, the final Teaching Grant for 1966–67 amounting to over Rs. 50,000/-, though sanctioned, has not yet been paid.

In spite of these and other difficulties we have, under God's protection, with the unstinted efforts of the staff and the full co-operation of the students, achieved some progress during the year. I take this occasion to express our gratitude to the public, especially our friends far and near, and particularly to all here present, for their appreciation and support, which had made this steady progress possible.

I owe a special debt of gratitude to you, Sir, for consenting so readily to preside over this function, in spite of the manifold calls on your time and attention, since you took charge of your important new assignment. It came unexpectedly for most of us, because you were already holding with distinction an important post in the educational field. We rejoice with all those in the university and outside who are aware of your long acquaintance with educational administration, and especially your long association with the Andhra University as a member of the various university bodies. We wish you a happy and fruitful term of office as Vice-Chancellor and hope the university administration in particular will benefit from your knowledge and experience. I now invite you kindily to address the gathering.

UNIVERSITY EXAMINATION RESULTS – APRIL, 1968.

	I Class	*II Class*	*III Class*	*Failed*	*% Passes*
PRE-UNIVERSITY :					
Mathematics, Physical Sciences	148	45	76	19	93
Biological Sciences, Physical Sciences	70	107	88	19	93
Indian History, Economics		3	28	16	66
Economics, Accounts	1	1	35	32	54
Total	219	156	227	86	87·5
THREE YEAR DEGREE RESULTS :					
B. A. History, Economics, Politics & Special English		1	12	10	56·5
B. Com.	1	11	12	10	70·6
B. Sc. Mathematics I, Mathematics II, Physics	3	3	4	5	66·6
Mathematics, Physics, Chemistry	29	34	12	15	83·3
Chemistry, Botany, Zoology	3	37	23	9	87·7
Total (B. Sc.)	35	74	39	29	83·6

ACADEMIC PRIZES TO BE AWARDED ON COLLEGE DAY

PRIZE WINNERS – 1968

B. Sc. Degree Examination, March/April, 1968

	Subject	*Name of the Candidate*
1.	FIRST in Part II with Mathematics Course (i), Mathematics Course (ii), and Physics.	G. Suryanarayana
2.	FIRST in Part II with Mathematics Course (i), Physics and Chemistry.	V. Badarinadh *
3.	SECOND in Part II with Mathematics Course (i), Physics and Chemistry.	J. Sivaram
4.	FIRST in Part II with Chemistry, Botany and Zoology.	K. Nagireddi
5.	SECOND in Part II with Chemistry, Botany and Zoology.	T. Sitarama Rao

B. A. Degree Examination March/April, 1968

6.	FIRST in Part II with History, Economics and Politics.	M. Rama Kantha Rao
7.	FIRST in Part II with History, Politics and Special English.	M. Soundara Rajan **

B. Com. Degree Examination March/April, 1968

8.	FIRST in Part II	C. Balasiva Subrahmanyam
9.	SECOND in Part II	K. Satyanarayana Prasad

* Awarded the Rodriguez Prize for the student who stands first in the B. Sc. University Examination in Part II, offering Mathematics, Physics and Chemistry.

** Also awarded the Prakasa Ramaiah Prize (presented by Mr. K. Kesava Rao in memory of his father) for the most outstanding student in final B. A. class of 1967–68.

UNIVERSITY EXAMINATIONS

Pre-University 1968

Part I – English

Name	*Prize*
Brahma Reddy, V.	First
Santhi Swaroop, V.	Second
Krishnaiah, M. V.	Third

Part II – Telugu

Hanumantha Rao, N.	First
Ankamma Rao, D.	Second
Seshagiri Rao, V. V. B.	Third

Part II – Hindi

Sood Anil Kumar	First
Vikram Singh, Rana	Second

Part II – French

Gopala Krishna Varma, D.	First

Part III – M. P.

Neme	*Prize*
Hanumantha Rao, S.	First
Venkateswara Reddy, D.	Second
Sood Anil Kumar	Third

Part III – B. P.

Venkata Ramaiah, G.	First
Brahma Reddy, V.	Second
Gopala Krishna Varma, D.	Third

Part III – E. I.

Jogaiah, K.	First
Chinnappa Reddy, T.	Second

Part III – E. A.

Durga Prasad, A.	First
Arogya Swamy, S.	Second

II U. C. UNIVERSITY EXAMINATIONS – MARCH/APRIL, 1968

English :

Joseph Honeyford, A.	First
Ravindranath, K.	Second
Sampath Kumar, B.	Third

Telugu :

Hanuma Reddy, S.	First
Siva Prasad, K.	Second
Simon, K.	Third

Hindi :

Lakshminarasimha Rao	First
Chandra Mohan, K.	Second

French :

Sebastian, P. T.	First

Hindi (B. Com.) :

Sesha Mohana Rao, B.	First
Sudhakaram, D.	Second

General Education (B. A. & B. Com.) :

Joseph Honeyford, A.	First
Bala Raju, D. D.	Second

General Education (B. Sc.) :

Syam Sundar, N.	First
Choudari Babu, N.	Second
Ravindranath, K.	Second

GROUP

Name	*Prize*
B. A. (H. E. P.) :	
Subba Rao, P.	First
B. A. (Special English) :	
Rama Murthy, P. B. S.	First
B. Sc. (M. M. P.) :	
Subba Rao, S.	First
Vara Prasada Rao, K.	Second
B. Sc. (M. P. C.) :	
Ravindranath, K.	First
Nageswara Rao, M.	Second
Venkateswarlu, M.	Third

Name	*Prize*
B. Sc. (C. B. Z.) :	
Vara Prasada Rao, D. V.	First
Anthoni Das, K.	Second
Sreerama Prasad, D.	Third
B. Com. :	
*Seena Reddy, D.	First
Nageswara Rao, M. D.	Second

* Prize in memory of C. Sankar Rao, of the B. Com. class 1964–67, who passed away on 30 August, 1967, instituted by his family to be awarded to the B. Com. student who secures the highest marks in Part II in the University Examination at the end of the Second Year.

COLLEGE EXAMINATIONS, MARCH 1968

I U. C. :	
English :	
Rama Gopal, Y.	First
Narisi Reddy, S.	Second
Hanumantha Rao, A.	Third
Telugu :	
Rajasekhara Reddy, M.	First
Nageswara Rao, B.	First
Nageswara Rao, T.	Third
Hindi :	
M. T. Shah	First
French :	
S. Narisi Reddy	First

B. Com. Hindi :	
Sundar Mohan, P. K.	First
Rama Rao, P.	Second
B. A. & B. Com. General Education :	
G. S. Narisi Reddy	First
S. Sreeramamurthy	Second
B. Sc. General Education :	
Nageswara Rao, K. V.	First
Krishna Rao, P.	Second
Soma Sekhar, G.	Third

GROUP

B. A. : M. E. P. :

Narendra Babu, D	First

B. A. : H. E. P. :

S. Narisi Reddy	First
Jayarami Reddy, B.	Second

H. P. : Spl. English :

Sambasiva Rao, K.	First

M. M. P. :

K. Sudhakar	First
P. Krishna Rao	Second
Anjaneyulu, K.	,,

M. P. C. :

Y. Pulla Rao	First
D. Basavaiah	Second
A. Hanumantha Rao	Third

C. B. Z. :

Nageswara Rao, T.	First
Peddi Reddy, V.	Second
Sudhakar, P.	Third

B. Com. :

Suryaprakash, D.	First
Sreerama Murthy, S.	Second

MORAL SCIENCE

II U. C. :

B.A., M.M.P. and B.Com.	Sreedhara Gupta, S.	First
M P.C. 1&2	Ravindranath, K.	First
C.B.Z. 1&2	Anil Kumar, V.	First

I U. C. :

B.A., M.M.P. and B.Com.	Narisi Reddy, S.	First
M.P.C. 1&2	Bose Babu, T.	First
C.B.Z. 1&2	Rama Brahmam	First

Pre-University :

S. 1	Venkateswara Sarma, T.	First
S. 2	Sreedhara Rao, K.	First
S. 3	*Hanumantha Rao, K. S.	First
S. 4	Prabhakara Rao, G.	First
S. 5	Sivaji, G.	First
S. 6	V. S Rana	First
S. 7	D. G. Krishna Varma	First
S. 8	Ravindra Babu, G.	First
S. 9 & 10	Syam Sundar Janak, R.	First

* Awarded the Sri P. Kameswara Rao Prize for Moral Science in the Pre-University class (established by Mrs. N. Lakshmi in honour of her father).

Religious Instruction: 1967-68

Pre-University :

K. Joseph	First

I U. C.

B. Raja Rao	First

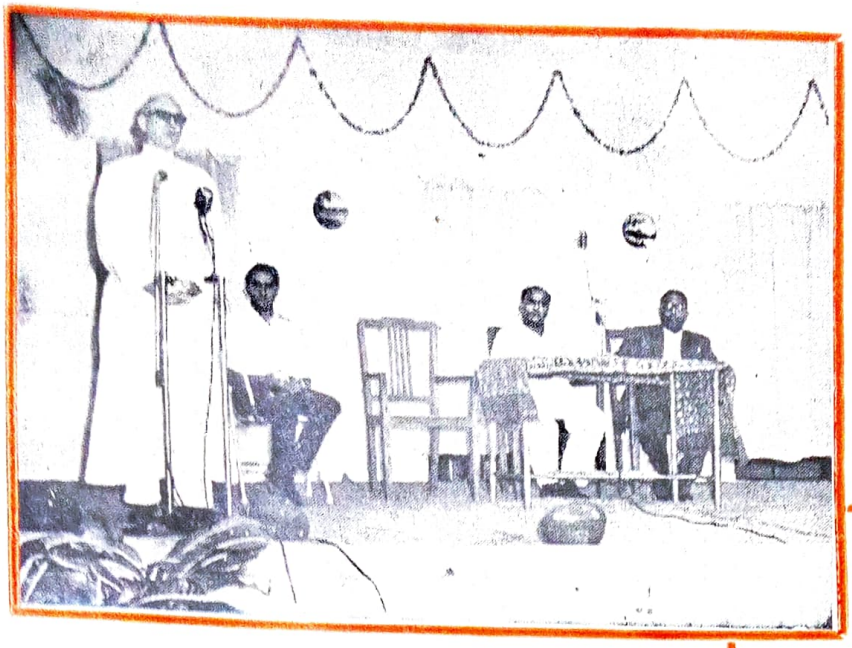
II U. C.

P. A. C. Irudaya Raj	First

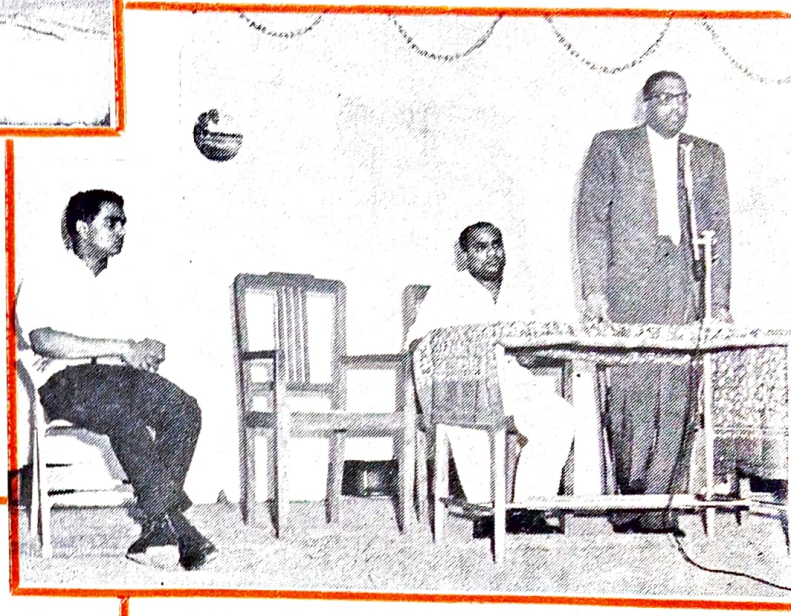
Scripture: 1967-68

Ambrose, A. V.	First

Introducing the Guest Speaker



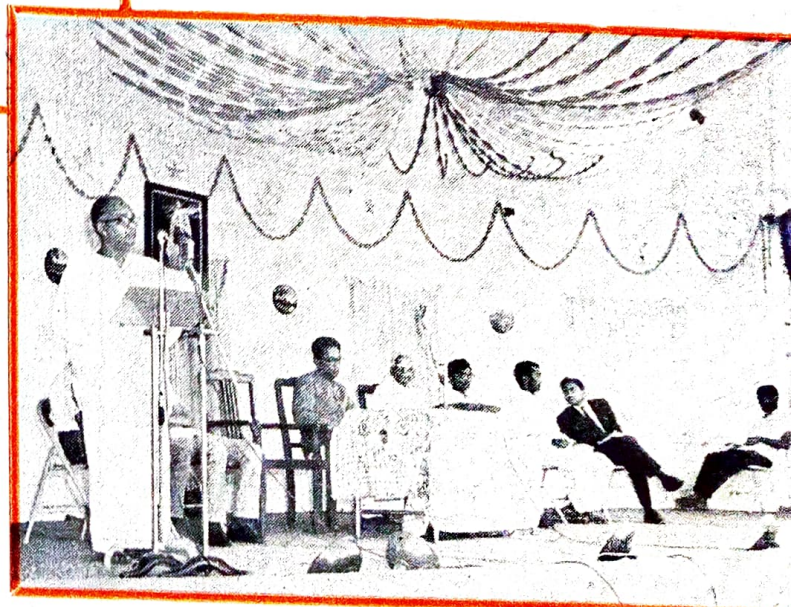
Dr. C. Sobhanadri, M. D.



Guest Speaker,

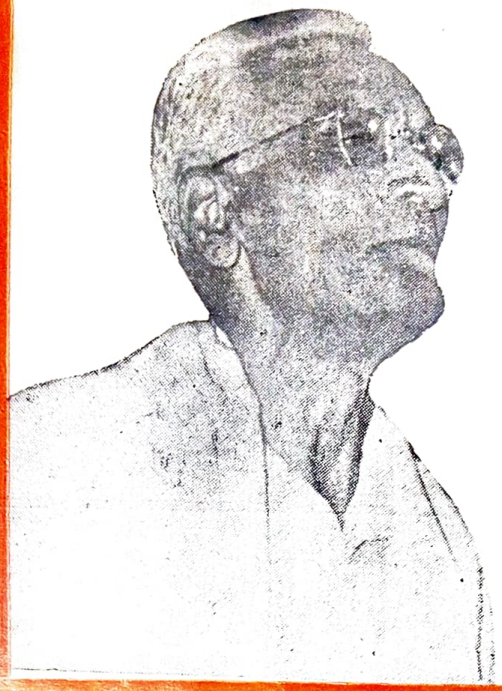
Sri N. V. Seshaiah,

Editor, Andhra Prabha.



Sri K. Kesava Rao, B. A. (Hons.)

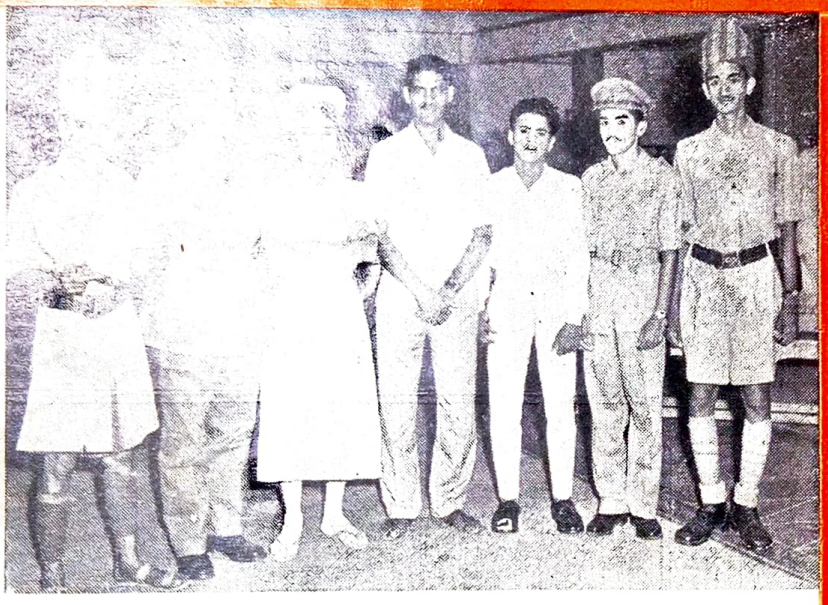
Photos : Bombay Studio.



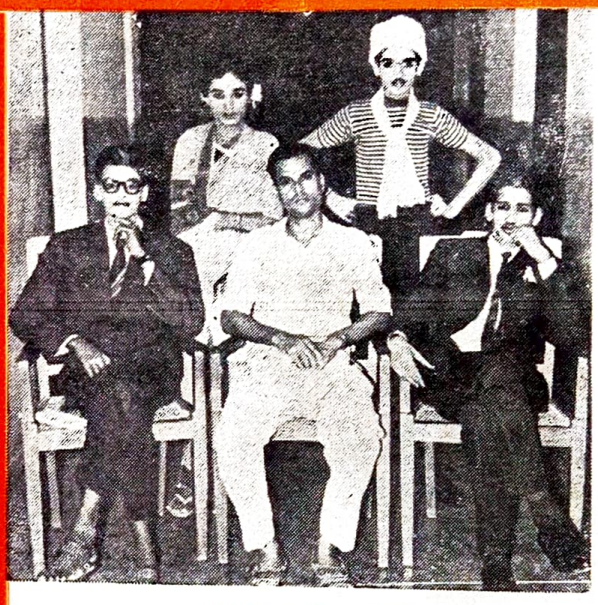
SRI N. V. SESHAIAH

Chief Speaker

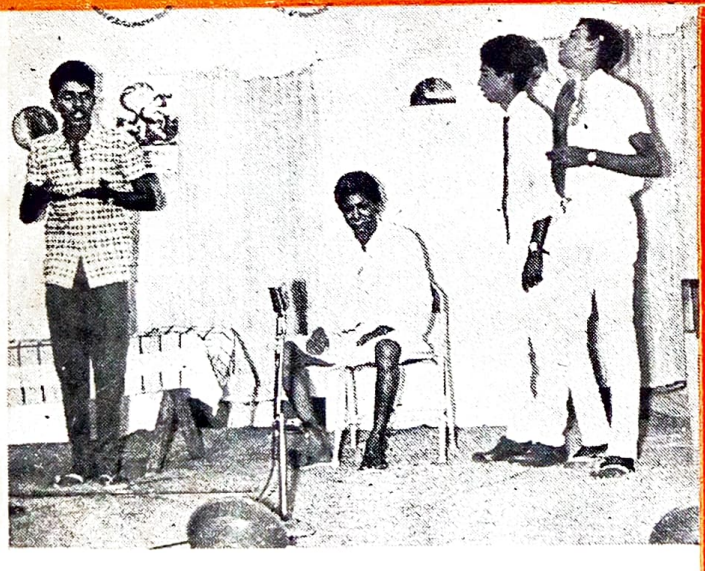
Cultural Week.



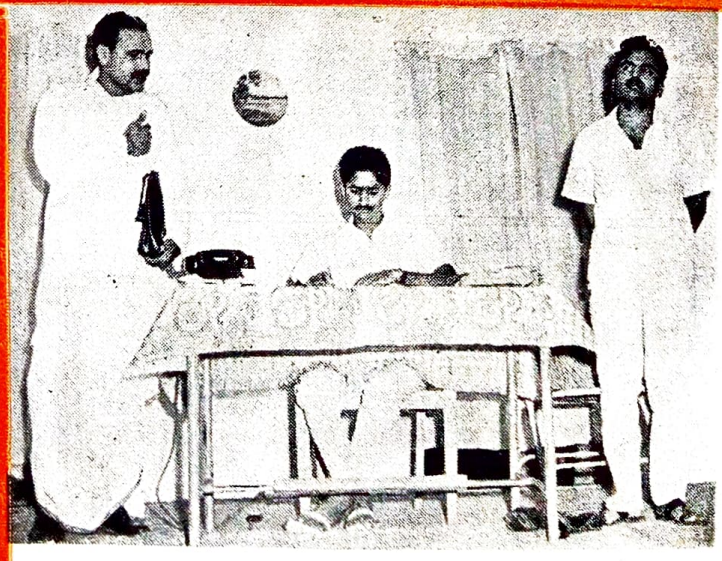
NOOTA PADAHARU



SIROMANI



PREMA PAKSHULU



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Photographs : Bombay Studio.

Gandhiji - A Profile

N. Prakash Babu, II B. Sc.

Gandhi is one of history's most amazing paradoxes – a soldier who fought with the weapons of a saint. Though largely a political leader and social reformer, he was essentially a mystic who tried to impress "the image of God upon the faces of brutes".

Mohandas Karamchand Gandhi was born in Porbunder on October 2nd, 1869, in a family which was known for its independence of spirit. His father was the Chief Minister of the State. His mother was a very pious religious woman, a devotee of Ahimsa. Gandhi lived like the other Hindus of the day. He became engaged at eight, married at twelve, went through the school at Porbunder, entered the college of Ahmedabad at seventeen, and at nineteen went to England to study law at the University of London, and was called to the bar in 1889.

Soon after starting his practice in Bombay he left for South Africa in 1893 to conduct the case of a merchant, Abdullah. While there, he began his political career. During the Boer War and the Great War he organized and commanded an Indian Ambulance (Civil) Unit with the British forces. While in South Africa he successfully led the Indian community against the government's policy of racial discrimination. But in achieving his ideal he did not resort to force. He employed non-violent methods. It was during this struggle that he developed the weapon known as "Satyagraha" or non-violence. In his choice of this weapon he was influenced by the writings to Tolstoy and Ruskin.

Gandhi returned to India in 1915, an acknowledged great political leader. He gave a new turn to the national struggle by applying his method of non-violence against the British. His first campaign of non-cooperation in 1920–22 achieved great success. But Gandhi called it off when it threatened to develop into violence. During 1922–24 he was imprisoned. He led his second campaign in 1930–32 and was again imprisoned. During this period he participated in the London Round Table Conference.

During the Second World War he launched his last Civil Disobedience campaign for National Independence in 1942. He was again detained until 1944. In the negotiations which resulted in the attainment of Independence in 1947, he played an active role behind the scenes. During his last days he undertook a fast unto death as a means of checking communal rioting, and aroused a great reaction against himself in public. As his efforts on behalf of the Muslims deeply offended the extremists and the Hindu Mahasabha, he was shot dead by Nathuram Godse in New Delhi on January 30, 1948. This is the life story in brief of the greatest Indian of modern times.

During his life-time Mahatma Gandhi regarded himself as the humblest man and

he lived accordingly. His dress was a simple loin-cloth; his dwelling a poor cottage; his food a handful of dates, a cup of orange juice and a cup of goat's milk. Again and again he asked his people to look upon him as in no way different from the rest of mankind. But his devotees have rightly ranked him with Jesus Christ and Buddha.

Mahatma Gandhi was a picture of courtesy, love, truth and affection. He despised the so-called civilization of the present day. His own definition of true civilization is summed up in two words, "Good Conduct".

Mahatma Gandhi preached tolerance and non-violence. "Passive resistance," Gandhi said, "requires an army not of men but supermen." "What do you think?" he asked in his Sermon of the Sea, "Wherein is superhuman courage required: in blowing others to pieces from behind a cannon, or with a smiling face to approach a cannon and to be blown to pieces?"

Gandhiji influenced India's life in many ways. He not only gave freedom to his country, but brought about a great moral regeneration in his countrymen. He was not only a political leader, but also a philosopher, a religious teacher and a social reformer. His services to untouchables and women are, perhaps, as great as his political achievements. His autobiography, the "Story of My Experiments with Truth", is an inspiring book. Besides this, Gandhi wrote a large number of other books on a variety of subjects, ranging from social reform, truth, non-violence, to hygiene and nature cure. He was a versatile man, capable of infinite work and always a source of inspiration to his companions and disciples.

Gandhi was great, but his life was a great tragedy. The very principles which he strove to preach and practice all his life were derided by his countrymen. He advocated peace and non-violence, and yet during the last years of his life he witnessed unprecedented horors of violence and bloodshed. More than once he had undertaken long fasts to bring about Hindu-Muslim unity, and yet the freedom of his country was won at the cost of this cherished ideal. He pleaded for an undivided India, but the country was partitioned. Freedom was achieved at too great a sacrifice and in his last days Gandhi was a most unhappy man. His heart was so full of sorrow at these developments that he declined to hoist the national flag at the Red Fort, Delhi, and to participate in the Independence Day celebrations.

In other matters too, Gandhiji's life – work was not only unfinished but undone. His gospel of spinning and the use of 'Khaddar' and Swadeshi had ceased to evoke much response from his people during the last years of his life. India went ahead with rapid industrialization, failing to stick to Swadeshi. The Congress which he had built up as a body of men devoted to selfless service and sacrifice became an ordinary political organisation whose members coveted power and influence. Again his work for Indians overseas, particularly in South Africa, was largely undone. In his own life-time he witnessed the policy of 'Apartheid' put into full practice there.

Gandhiji did not achieve all his objectives. For that matter, success in this world is never final and complete. Gandhiji's failure was because his objectives were ideals, and an ideal is a thing never fully possessed or achieved. But his failure has a touch of greatness – the utter sincerity and devotion with which he strove to encompass his ideals. That is a rich legacy he has bequeathed not only to his immediate followers like Nehru and Rajendra Prasad, but to all Indians. For Gandhiji is dead, but his great spirit lives on.

Gandhi's Religious Outlook

Y. Rama Gopal, II B. Sc.

Mahatma Gandhi was born a Hindu, and ever remained a Hindu. His Hinduism grew and developed in the light of his contact with other religions, especially Christianity. The Gita and The Sermon on the Mount moulded his religious outlook. But, he was not an orthodox Hindu in the ordinary sense of the term. He had no belief in the caste system; untouchability was "a hydra-headed monster appearing in many shapes and some of them very subtle." He condemned cruel social customs sanctioned by religion, like child marriage, child widow-hood, and he was not bothered by the 'maya' theory. To him the cow was a poem of pity; he venerated it, urged its protection, but was not for a legal ban on cow-slaughter. He accepted only those tenets of Hinduism which his conscience permitted.

In answer to the question, "What is Religion?" he says, "Not the religion that you will get after reading all the scriptures of the world: it is not really a grasp by the brain, but it is a heart-grasp. It is a thing which is not alien to us, but it is a thing which has to be evolved out of us. It is always within us: with some consciously so, with others quite unconsciously. But it is there..." By religion he does not mean formal or customary religion but the religion which brings us face to face with our Maker. It "is a belief in ordered moral government of the universe."

Speaking of the importance of Religion, Mahatma Gandhi says. "No man can live without religion. There are some who in the egotism of their reason declare that they have nothing to do with religion. But it is like a man saying that he breathes but he has no nose. Whether by instinct or by reason or by superstition, man acknowledges some sort of relationship with the Divine."

Gandhi respected all religions, for he says, "Religions are but different roads converging to the same point. What does it matter that we take different roads, so long as we reach the same goal? In reality there are as many religions as there are individuals." Further he says, "For me the different religions are beautiful flowers from the same garden, for they are branches of the same majestic tree. Therefore they are equally true though being received and interpreted through human instruments equally imperfect." His position is that all great religions are fundamentally equal. After long study and experience he came to the conclusion "... all great religions of the world are true more or less. I say 'more or less' because I believe that everything that the human hand touches, by reason of the very fact that human beings are imperfect, becomes imperfect."

Great strength in religion, says the Mahatma, lies on the practical side, in applied ethics, the principles of conduct which he advocated and the means of

fulfilling them. He says, "To me God is truth and love, God is ethics and morality, God is fearlessness. God is the source of light and life and yet he is above and beyond all these. God is conscience. He is atheism for an atheist. For in his boundless love God permits the atheist to live." Later he says, "Ahimsa is my God and Truth is my God. When I look for Truth, Ahimsa says 'Find it through me.' When I look for Ahimsa, Truth says, 'Find it out through me'." His concept of Ahimsa was non-injury to living creatures, whether by word, deed or thought. The practice of manual labour, celibacy, restraint of desire, non-possession, fearlessness, amelioration of the untouchables, use of native Indian languages for education and the wearing of homespun cloth, were the tenets with the help of which he wished to give a new life to India.

The underlying basis of Gandhi's social and political programme was the religious regeneration of India and Indians. Religious regeneration is impossible without faith in God, Truth and Ahimsa. In the *Harijan* he says, "My prayerful search gave me the revealing maxim that 'Truth is God' instead of the usual one, 'God is Truth'." In his *Autobiography* he says, "To see the universal and all-pervading spirit of Truth face to face, one must be able to love the meanest of creation as oneself. And a man who aspires after that cannot afford to keep out of any field of life. That is why my devotion to truth has drawn me into the field of politics and I can say without the slightest hesitation, and yet in all humility, that those who say that religion has nothing to do with politics do not know what religion means."

In the *Harijan* Gandhi says, "Politics divorced of religion has no meaning." He adds, "We want also the steady light, the infallible light of religious faith; not a faith which merely appeals to the intelligence, but a faith which is indelibly inscribed in the heart. First we want to realize that religious consciousness, and immediately we have done that, I think the whole department of life is open to us....."

In 1920, Gandhi wrote in *Young India*, "I reject any religious doctrine that does not appeal to reason and is in conflict with morality. I tolerate unreasonable religious sentiment when it is not immoral." According to him, religion was subject to the limitations imposed by reason, and religious practices were subject to the limitations imposed by morality. "Religion which takes no account of practical affairs and does not help to solve them is no religion." But this does not mean that religion is to enter into public life. On the contrary, Gandhi stood for a secular state that would have nothing to do with religion. For him "religion was a personal matter."

Gandhi had great belief in prayer; he says, "I believe that prayer is the very soul and essence of religion and therefore prayer must be the very core of the life of man. Begin therefore your day with prayer and make it so soulful that it may remain with you until the evening." Later he says, "He therefore who hungers for the awakening of the Divine in him must fall back on prayer. But prayer is no mere exercise of words or of the ears. It is no mere repetition of empty formulae; any amount of repetition of 'Ramanama' is futile if it fails to stir the soul. It is better in prayer to have a heart without words than words without a heart."

The religious man according to Gandhi was not a man who preached stirring sermons, or who fully carried out the so-called religious customs. Rather, he was the man who lost himself in devotion to the service of humanity. He says in his *Antobiography*, "I am endeavouring to see God through service of humanity, for I know that God is neither in Heaven nor down below but in everyone."

Children of God

D. Satyanarayana Raju, P. U. C.

Sir Samuel Hoare was at that time the Secretary of State for India. Jawaharlal Nehru and many other leaders had already been imprisoned, and now Gandhi was lodged in Yeravada Jail. He was soon joined by Vallabhai Patel, whom Gandhi had dubbed "Sardar" (nobleman), and Mahdev Desai. After some time in that prison, Gandhi began to write down his thoughts on God and the ideal conduct of man. These were later published as a little book called "Yeravada Mandir". Mandir means temple. A jail where God is discussed and worshipped becomes a temple. "God is", Gandhi wrote in his Autobiography. Presently in the prison silences of Yeravada Temple, the Mahatma heard the still small voice calling him to action. The result was the most tempestuous fortnight in India's modern history.

An orthodox Hindu must not touch an 'untouchable' or anything he uses. If by chance he does, he purifies himself by religiously prescribed ablutions. Even the shadow of an untouchable is regarded as unclean in some areas of India. Obviously, therefore, untouchables should not enter Hindu temples. These untouchables are 'outcastes' in the Hindu sense that they do not belong to the four Hindu castes, which are in descending order, the Brahmins or priests, the Kshatriyas or rulers and warriors, the Vaisyas or tradesmen and farmers, and the Sudras or labourers. Below these, but too low to stand even on the lowest rung of the Hindu social ladder, come the outcaste untouchables, Hindus outside the pale.

Gandhi belonged to the Vaisya caste and to the Modh-Bania subcaste. Banias are traders, and the Gandhi's far back were grocers. 'Gandhi' means 'grocer'. In the early years of his Mahatmahood, Gandhi favoured the caste system. "Prohibition against intermarriage and interdining is essential for the rapid evolution of the soul," Gandhi wrote in his *Young India.* Later he reversed his position and showed it in word and deed. Gandhi was far too observant and honest to remain inflexible.

Gandhiji's son Devadas loved and wanted to marry the daughter of Rajagopalachari who was a Brahmin. But Gandhi objected to this intercaste marriage and love match. But at last he painfully brought himself to agree to it. A few years later he had changed his mind, and he refused to attend any but intercaste marriages. After he left Sabarmathi, he would not allow the boys and girls at Sevagram to marry unless one of the parties was untouchable. Writing to Charles Freer Andrews he said, "I used to laugh at my mother for making us bathe when we touched any pariah." He played with an untouchable boy even after his beloved Putlibai forbade it. One morning the Mahatma announced out of the blue that he was adopting a little untouchable

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girl named Lakshmi as his – and therefore, as Kasturibai's – daughter. Gandhiji thereby made himself an untouchable, ostracized by Hindu society. But after some years many high caste Hindus felt honoured to come to the Ashram to talk and eat with Gandhi.

In September 1931, Gandhi attended the Second Round Table Conference in London which proposed a separate electorate for untouchables, or at least the reservation of seats in Indian legislatures for untouchables within the Hindu bloc. Gandhi had opposed both measures as divisive, reactionary, and unfruitful. He had also threatened to 'fast unto death' if the measures were adopted. Now on August 17, 1932, Prime Minister Ramsay MacDonald pronounced in favour of separate electorates. Gandhi replied, "I have to resist your decision with my life". His fast would begin at noon on September 20th. In a long letter dated September 8th, Mr. MacDonald expressed his "surprise and, let me add, my very sincere regret." He suggested that Gandhi had misunderstood his benevolence.

From all sides came letters, messages, and telegrams attempting to dissuade Gandhi. Many friends did not understand why he intended to die on this side-issue in the Swaraj movement. Nehru, in jail, "felt annoyed with him." Gandhi was unmoved. He considered the eradication of untouchability as a matter of the gravest urgency. At 11·30 a.m, on September 20th, Gandhi took his last meal. It consisted of a glass of hot water with honey and lemon juice.

With the life of the frail, 63 year-old Mahatma visibly ebbing away in Yeravada Jail, the Indian leaders hastened to sink their animosities. On the fifth day the Poona Pact or the Yeravada Pact was forged, doing away with separate electorates. On the sixth day Mr. Ramsay MacDonald recognized the pact. It was a historic event. It did not kill untouchability. It could not. Nor did segregation and repression end. But untouchability forfeited public approval. It snapped a long chain that stretched back into antiquity, a chain that would never fetter Hindu society again. The fast had initiated an emotional churning of Hindu society. It found a concrete expression in Gandhi's "Anti-untouchability League" launched on September 30th. Later, Gandhi evolved a new term, "Harijan", meaning "children of God", and his beloved Harijans were one of his main concerns for the rest of his life.

Gandhiji's Message to Students

N. Peri Sastry, III B. Com.

The present educational system in our country suffers from many ills of which the lack of certain enduring values is the most striking. The various Indian Universities follow differnt patterns or systems of education. While making alterations and experiments with a view to improvement, the standard of education is unfortunately falling, and the students do not render a good account of themselves. One can frankly say that we have reached such a pass that no one knows what to do next in order to get out of the educational mess we are in. In this context it would be worthwhile to recall Gandhiji's reflections on educational policy and what he thought would benefit students.

According to him the student derives a real education only when he is able to draw the best out of himself. He should develop the proper mentality towards his inner life and the outer world and arrange his life according to that mentality. Education losses its values if one does not attach importance to the principles of morality.

Gandhiji also emphasises that the cultural aspect of education is more valuable than the literary. Inner culture must be focussed on speech and the behaviour shown towards teachers and elders. Students begin their education at home. The parents should impart discipline and proper training to their children. Students should not get tied up with the wrong notion of securing education only for power and wealth. Essentially, education should be self-supporting while buildsing up the bodies and developing the minds of children. Morever, they become at the same time self-reliant and independent. Education will thus play an important role in the formation of character and fully achieve its noble purpose.

Next, Gandhiji deplored the lack of faith in God in the younger generation. In our languages, there is a beautiful word equivalent to the word student: that is "Brahmachari." It means, searcher after God, one who tries to bring himself close to God in as short a time as possible. Gandhiji felt that in order to have purity of heart, mind, and soul, a student should have confidence in God. Again he thought that all education would be wasted if the student did not attain mastery over his thoughts and actions. The student should be capable of controlling his passions and not become their plaything. He should have the heart to give, and then only can he earn,respect and a good name from society.

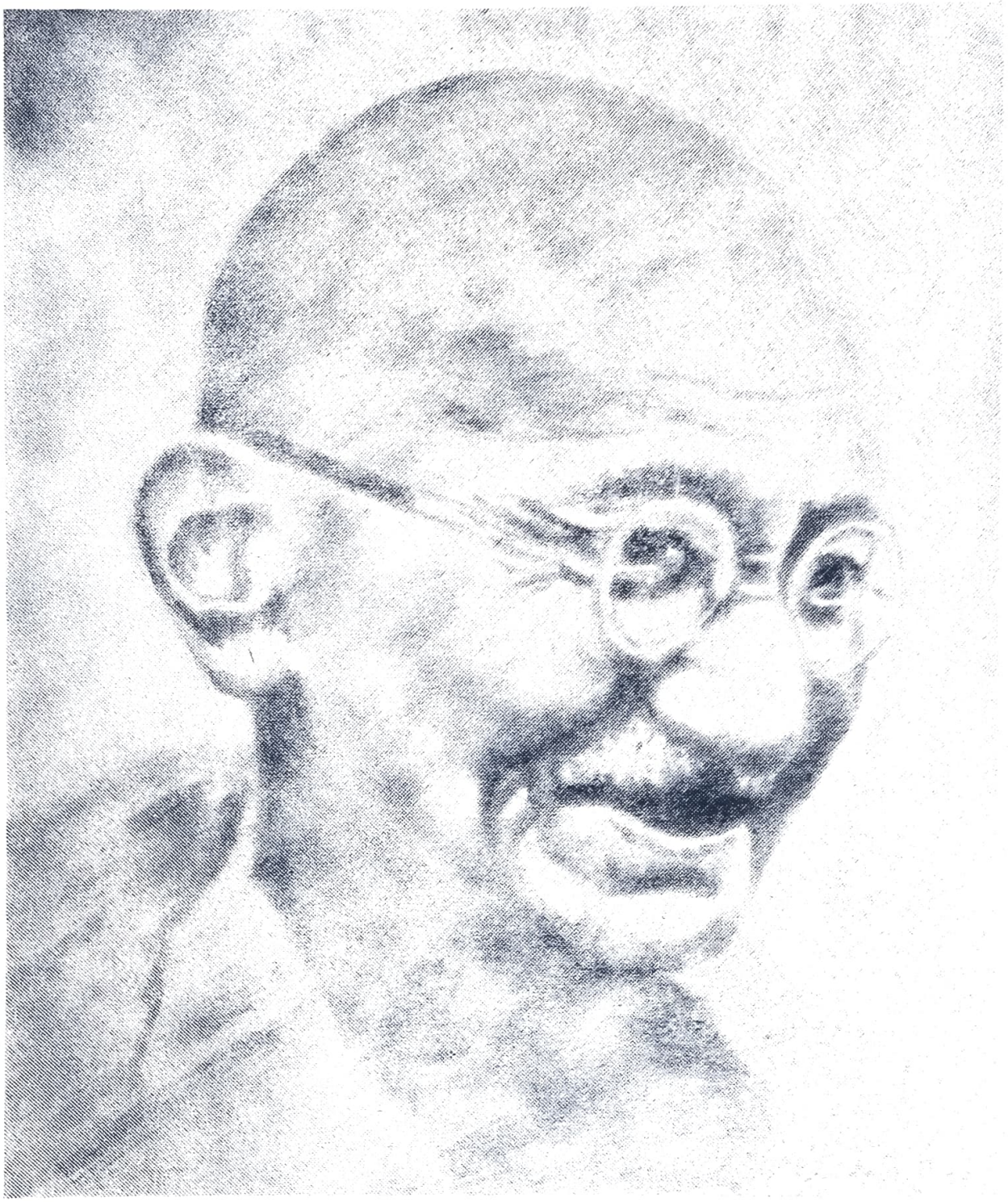
The question often drawing our attention is: should students take part in politics and strikes ? Students form the backbone of a nation, and, being the bright hopes of the future, they should be aware of political problems and events. Gandhiji advised the students to hear all the parties and read all the news, but to aim at assimilating the

truth alone and rejecting the remainder. They should not meddle in power politics which only interferes with and disturbs their studies. They would cease to be students and would fail to serve the country in its critical period. Strikes in all their phases should be eliminated. Students are the embodiments of discipline and therefore they should not set up a bad precedent for others to follow. A strike by students is justified only in extra-ordinary circumstances. Instead, students would be rendering a great service to the country by doing constructive work and public service. They could spend their vacation usefully by volunteering to devote their energies for rural uplift and progress. They should adapt themselves to the rural environment and have a mutual contact and understanding with the village folk. India lives in its villages and their advancement leads to the country's prosperity.

One of the worst social evils prevailing in India today is the dowry system in marriage. Exacting heavy payments on the wedding day has become a common feature. One who feels that taking a dowry is indispensable discredits his education and his country and dishonours womanhood. Gandhiji makes a suggestion, "A strong public opinion should be mobilized to condemn this degrading and disgraceful practice of dowry and young men who soil their fingers with such ill-gotten gold should be excommunicated from society."

Finally the panacea to cure such ills rests with ebullient youth. As the citizens of the morrow, they should be gifted with dynamic leadership. Gandhiji makes a comment in this regard : "A leader should have a clear conscience and try to co-ordinate the views of people. He will move like a rudderless boat if he is unable to take a firm decision. He should not be carried away by the mob. This would be the testing time for him to act boldly and courageously. He should never yield to pressure tactics but use his discretion according to his own lights." The sterling qualities which promote able leadership according to Gandhiji are discipline, honesty, integrity, truth, tolerance, faith and vision. In addition goodness must be joined with knowledge. But this would be in vain if we do not retain the fine discriminating quality which goes with spiritual courage and character. There should be complete devotion to such values as truth and love.

What greater tribute could we pay to Gandhiji than to hold aloft his ideals and implement them in every possible way? Let the students equip themselves mentally, morally, and physically to be the makers of modern India. It would be fitting to remember Gandhiji's fine message to students. "I have no doubt that your teachers repeatedly tell you that all this mental and literary training that you receive will be futile unless it is broad-based on truth and love. Truth will make you brave and fearless men, able to give a good account of yourselves, wherever you go. Love will make life bearable for you because love has a special quality of abundance of love in return. May God help you day after day to devleop these qualities within yourselves."



THE FATHER OF THE NATION

Drawing : C. Ranga Rao, I. B. Sc.

Kasturibai — The Valiant Woman

The Gandhian Principle of Non-violence

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The life and activities of Mohandas Karamchand Gandi, alias Mahatma Gandhi, spanned two centuries, the 19th and 20th, and three continents, Asia, Africa and Europe. He was born in India enslaved and disarmed, and educated in the classic land of freedom, England, in one of the freest professions, the law. But he discovered his latent abilities, mission in life, and a unique method of action in South Africa. Then he came back to India in 1915, to live, speak, write and work incessantly for the country's freedom. Then he died a freeman in 1948 by the bullets of an assassin sanctifying our soil by his martyr's blood, shed for the cause of peace and goodwill among his countrymen.

Gandhiji's life was replete with the enunciation of first principles and efforts to live up to them. These must be understood in the context of the dominant tendencies of our age. Of these, Arthur Koestler said, "The basic novelty of our age is the combination of the sudden, unique increase in physical power with the unprecedented spiritual ebb-tide." It was against an unparalleled rise in constructive and destructive power and a progressive spiritual dessication that Gandhiji forged, by the process of trial and error, his technique of "Satyagraha" or truth force, and developed it later into a vital principle of life and endeavour. On it rests his chief title to undying fame in the annals of human history. As Dr. Krishnalal Sridharani pointed out, "The greatest and the most unique contribution of India to the world in the field of social, economic and political thought and practice is the theory and strategy of Satyagraha...as perfected by Mahatma Gandhi."

Non-violence or "Ahimsa" is in ideal terms, the absence of violence or "himsa" in thought, word and deed. Satyagraha is its practical variant translated into intelligible terms as "non-violent direct action". The axiological roots of non-violence are varied. "Reverence for life" is the most comprehensive value of them all, based on an awareness of the underlying unity of life in all its manifestations. Other values associated with it are truth or ultimate reality behind the passing flux of immediate things; love or a deep-determined, enduring and creative interest in all forms of life; courage or unflinching action in conformity with the demands of truth, love and justice; a sense of human dignity, arising out of a profound knowledge of our faith in the potentialities of human nature; and humility, being rather a true sense of proportion in regard to people, things, qualities and ultimate values. Human values, like desire for truth, love, courage, faith, and humility, exist in greater or less strength in every person. The genius of Gandhiji lay in combining such values with appropriate practices, both gathered from disparate sources, to

evolve that moral and spiritual principle of life and action known as "non-violence." Acknowledgements to those that inspired him in his long and arduous vocation are in order. Jesus, Socrates, Leo Tolstoy, Henry David Thoreau, P. B. Shelley, John Ruskin, G. K. Chesterton, Edward Carpenter and Henry Stephens Salt supplied him with various elements of it. The Bhagavad Gita, the life of Buddha, Vishnaivism and Jainism were the Indian influences that led him in the same direction. Honesty, however, compels us to admit that the non-Indian influences, values as well as practices, had been more decisive in shaping the Gandhian principle of non-violence than Gandhiji himself cared to admit.

The praxiology of non-violence includes a wide array of practices or methods intended to convince and convert the opponents of change or the upholders of injustice and to bring about agreements or settlements acceptable to the parties concerned. They include self-immolation, dhurna or sit-down strikes, negotiation and arbitration, persuasive agitation, demonstrations and the ultimatum, self-purification through fasting, prayers and self-denials, strikes and general strike picketing, economic boycott, non-payment of taxes, Hizrat or emigration from abodes of tyranny, non-cooperation, ostracism or social boycott, civil disobedience, assertive Satyagraha or taking over of the functions of the paralyzed government and establishment of parallel government.

The adoption and effectiveness of these non-violent weapons to oppose injustice and to secure the desired change, social or political, Gandhiji insisted, are conditioned by the moral worth and the mental discipline of the non-violent resisters or Satyagrahis. To be worthy of non-violence the Satyagrahis must eschew fear, cowardice, anger, hatred, pride, scorn, disgust, anxiety and like qualities. They must have self-control and mastery, willingness to suffer and die for a cause and respect for the personality and moral integrity of their adversary. By self-training and discipline, Gandhiji held, the necessary values and qualities could be cultivated even by ordinary human beings to become good non-violent soldiers. Then alone could they resort to the various steps or methods of non-violent direct action to achieve the desired ends. Conceived thus, Satyagraha becomes in the expressive phrase of William James, "the moral equivalent of war", and more exacting than it.

All said and done, violence and not non- violence is a positive trait of most human beings in all climes and times. "Ahimsa" is a negative virtue to be acquired by constant endeavour. Few men, as they normally live and think, are capable of such effort. Gandhiji painfully realized the human and other limitations of non-violence as a mere technique or method of political action in the course of his association with our freedom struggle. He therefore tried to elevate it into a social philosophy and a positive system of life. Geoffrey Ashe makes clear that for Gandhi non-violence was a way of thinking and living that went on all the time. His constructive programme, including village uplift, revival of handicrafts, and the abolition of untouchability, must be understood as the outline of a new counter-society free from exploitation, injustice and tyranny of every kind. This society, based on the eternal values of love, non-violence and truth, is to seek the good of all, or "Sarvodaya". It should develop a distinct mode of life on a do-it-yourself basis. A decentralized economy and political authority, acknowledging the

supremacy of the moral law on all issues and working by the method of consensus, are to be its outstanding features. The institutional form of a non-violent state would simply be the concrete expression of the moral level of its people. The citizens can and should resist not only internal weaknesses but also external aggression and war by non-violent techniques.

Gandhiji's espousal of non-violence had, be it noted in passing, full consciousness of the conditions and requirements of ordinary humanity. For himself he set the ideal of non-violence in absolute terms, but for others in relative terms. Violence and war are preferable in their case to cowardice and ignominious surrender to tyranny or injustice.

Gandhi the apostle of non-violence met with a violent end; but his spirit abides. The American diplomat Chester Bowles once observed, everybody on earth has been affected by him in some degree or other. Partly because of him, the British Empire in India ceased to exist, precipitating the liquidation of other empires in Asia and Africa. His teaching and techniques have inspired a number of struggles for human liberation in quarters where armed revolt would have been out of the question. The American Civil Rights Campign was foretold by him and directed by his avowed admirers and imitators like Martin Luther King. Without his broadening of horizons the spectacular wave of "protest" movements might never have begun to unroll in the U. S. or elsewhere. His image has become rather dim in India in the efflux of time, but his triumphant "paradox of power through non-violence" continues to haunt imaginations. His message of non-violence evokes only lip-service from most of his erstwhile followers. But for the whole world, confronting the prospect of a nuclear inferno, its relevance is undoubted. The fundamental issue is not, as some pose it, whether men can practice politics, national or international, without violence. They must, if humanity is to survive. This only shows how difficult but necessary it is for human beings to live by and for certain ideals and values in this world.

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Reading maketh a full man; conference a ready man; and writing an exact man; and, therefore, if a man write little, he had need have a great memory; if he confer little, he had need have a present wit; and if he read little, he had need have much cunning, to seem to know that he doth not.

— *Francis Bacon "Of Studies".*

Non-violence

K. Bhemeswara Rao, I B. Sc.

"What other men have taught as a personal discipline, Gandhi has transformed into a social programme for the redemption of the world." Those words of J. H. Holmes sum up the greatness of Gandhi. His claim to greatness lies not in anything that he said or wrote or did, but in the creed that he evolved and lived up to most scrupulously. Gandhi was not born to greatness; nor was he a great general, writer, scientist, or philosopher. Yet this slight wisp of a man had an inherent strength that made him world-famous, and a genius that was appreciated by a nation that he made. What was this creed that he fashioned and preached and practised?

Every new invention or discovery looks infinitely easy after it has been devised or disinterred. How simple it is to say that dirt cannot remove dirt, or "How can Satan reprove Satan? or violence remedy violence?" It is non-violence that must set right the vagaries of violence, for if violence could do it, the progress of civilization must be an ascending spiral of violence, and more violence to cure lesser violence. Gandhi was not the first to eschew force; from the dawn of civilization that precept has been inscribed on the heart of man. Gandhi merely dug it out from the debris of violence and materialism which had covered it for centuries; brought it to light from the Vedas and Upanishads and the Gita and the teachings of Buddha and Christ.

Gandhi brought to this old science a new form — non-violence and the philosophy of *Ahimsa*. Etymologically *Ahimsa* is *Na* and *Himsa*. But Gandhi's Ahimsa was not a negative attitude of refraining from violence. It was a reversal of the eye-for-an-eye policy which ends in making everybody blind or blind with fury. It returns good for evil until the evildoer tires of evil. It means forgiving them that trespass against you, and giving your coat unto him that stealeth your cloak. This implies that there is no retaliation, no harbouring of resentment, no intrigue, no vengeance, no organised war or secret murder--in a word, no violence in thought, word, or deed, certainly no loss of temper.

"Ahimsa or non-violence," says Gandhi, "is no wooden or lifeless dogma, but a living and life-giving force. It is an attribute of the brave, in fact it is their all. It is the special attribute of the soul. That is why it has been described as the highest dharma. The sun of Ahimsa carries all the hosts of darkness such as hatred, anger and malice before himself."

The practice of Ahimsa needs and fosters *Satyagraha*, said Gandhi. *Satya* means truth, the equivalent of love, and both are attributes of the soul; *agraha* is firmness or force. *Satyagraha* is therefore

translated Soul Force. Satyagraha, Gandhi wrote, "is the vindication of truth not by infliction of suffering on the opponent but on one's self." The opponent must be "weaned from error by patience and sympathy." Weaned, not crushed. Satyagraha assumes a happy communication between opposing sides till they become friends in agreement. Gandhi never sought to humiliate or defeat his opponents. He wished to convert them. He hoped that if he practised the Sermon on the Mount, General Jan Christiaan Smuts would remember that he was a Christian. Violence may be better than cowardice, but non-violence is better than violence; and non-violence involves self-suffering. That suffering should be pure. The intensity of suffering gains in proportion to its purity, and its effectiveness grows in proportion to its intensity.

Truth was Gandhi's God and non-violence was his means of attaining it. The strength of his faith in non-violence is equalled only by the vigour of its expression. On the eve of Munich he wrote, "God has chosen me as his instrument for presenting non-violence to India for dealing with her ills. My faith in non-violence remains as strong as ever. I am quite sure that not only should it answer all our requirements in our own country, but that it should if properly applied prevent the bloodshed that is going on outside India and is threatening to overthrow the Western world." It was a challenge that the West never accepted.

Ahimsa means the largest love. It is the supreme law. It cannot be taught by word of mouth. It is kindled in our heart by the grace of God, in answer to earnest prayer. It is no dead abstraction, no unreal sentiment, but a living and operative virtue in the heart and moral nature of man. It enlivens the dullest soul with an ideal out of and beyond itself, lifting every faculty to a higher intellect with a fealty to something better than self. It was an article of faith and not a policy.

Gandhi's non-violence had nothing in it of passivity or cowardice. "I would rather have India resort to arms in order to defend her honour," said he, "than that she should in a cowardly manner become or remain a helpless witness to her own dishonour." The proof is that Gandhi never felt helpless in practising his non-violent creed. "The hardest metal yields to sufficient heat, even so must the hardest heart melt before the sufficiency of the heat of non-violence. And there is no limit to the capacity of non-violence to generate heat. During my half-century of experience, I have not yet come across a situation when I had to say that I was helpless, that I had no remedy in terms of non-violence."

An eloquent testmonial is the letter of General Smuts. "I do not like your people," he wrote, "and I do not care to assist them at all. But what am I to do? You help us in our days of need. How can we lay hands upon you? I often wish that you took to violence like the English strikers, and then we would know at once how to dispose of you. But you will not injure even the enemy. You desire victory by self-suffering alone and never transgress your self-imposed limits of courtesy and chivalry. And that is what reduces us to helplessness."

Clearly, non-violence is not a weapon of the weak. It is the weapon of the strongest and the bravest. The true man of God has the strength to use the sword, but will not use it, knowing that every man is the image of God. No power on earth

can stand before the march of a peaceful, determined and God-fearing people — if there be such a people. Non-violence is more powerful than all the armaments in the world When Czechoslovakia was occupied by Hitler, Gandhi suggested that they should follow non-violent methods. A friend said,

"Hitler knows no pity. Your spiritual effort will avail nothing before him "

"You may be right", replied Gandhi. "History has no record of a nation having adopted non-violent resistance. If Hitler is unaffected by my suffering, it does not matter. For I shall have lost nothing worthy. My honour is the only thing worth preserving. That is independent of Hitler's pity. But as a believer in non-violence, I may not limit its possibilities. Hitherto he and his likes have built upon their invariable experience that men yield to force. Unarmed men, women and children offering non-violent resistance without any bitterness in them will be a novel experience for them. Who can dare say that it is not in their nature to respond to the higher and finer forces ? They have the same soul that I have."

A historical speech !

Non-violence and truth were Gandhi's grammar of love. As long as Gandhi is revered, Ahimsa will be remembered. But do we have the courage to practise it ?

Studies serve for delight, for ornament, and for ability. Their chief use for delight, is in privateness and retiring; for ornament, is in discourse; and for ability, is in the judgement and disposition of business; for expert men can execute, and perhaps judge of particulars, one by one: but the general counsels, and the plots and marshalling of affairs come best from those that are learned. To spend too much time in studies, is sloth; to use them too much for ornament, is affectation; to make judgement wholly by their rules, is the humour of a scholar; they perfect nature, and are perfected by experience; for natural abilities are like natural plants, that need pruning by study; and studies themselves do give forth directions too much at large, except they be bounded in by experience.

— *Francis Bacon "Of Studies".*

గాంధీజీ - సత్యము

మెట్టా వేంకటేశ్వరరావు

భారతీయాధ్యాత్మిక వాఙ్మయమునందు 'ధర్మ' శబ్దమున కెట్టి విపులార్థము కలదో, అంతటి అర్థమును గాంధీమహాత్ముడు 'సత్యము' అను పదమునకు ఇచ్చి యున్నాడు. అనగా సర్వభూత హితమైన వ్యాపార సమాహారమే సత్య మని ఆయన అభిప్రాయము. అంతియేగాక భగవంతుడె సత్యమని అనినాడు కాని తరువాత తరువాత ఈ నిర్వచనము మార్చి సత్యమే భగవంతుడని, భగవదస్తిత్వమును అంగీకరించని నాస్తికులకు గూడ అంగీకారయోగ్యమగు నిర్వచన మొసగినాడు 'సత్'-శబ్దమునకు 'ఉండు' అని కదా అర్థము: ఏది త్రికాలా బాధితమైన ఉనికిని కలిగి యుండునో అదియే సత్యము. అట్టిది భగవత్స్వ రూప మొక్కటియే గదా: కాగా, 'ఓం తత్సత్' అను శ్రుతి వాక్యమే మహాత్ముని పై నిర్వచనమునకు ప్రమాణము. "సత్యాన్నాస్తి పరోధర్మః" సత్యము కంటె వేరు ధర్మము లేదు) మున్నగు వాక్యములు కూడా గాంధీజీకిగల సత్యముయొక్క సర్వ ధర్మాతిశాయిత్వభావమును సర్వధర్మ సమాహారత్వ భావమును సమర్థించుచున్నవి. మహాత్ముడు తన జీవితకాల మంతయు ప్రబోధించిన అహింస, దయ, ప్రేమ, సౌభ్రాత్రము, మున్నగు ఉదాత్త భావముల సత్యము యొక్క భిన్న రూపములే.

కాగా, అట్టిసత్యమేది అనుప్రశ్నమునకు, పరిశుద్ధాత్ముల యొక్క మనస్సునందు జన్మించినభావమే సత్యమని గాంధీజీ సమాధానము. అయినచో, ఒకేవిషయమున పలువురు పలువిధములైన అభిప్రాయములు కలిగియుందురు గదా. అపుడెవ్వరి అభిప్రాయమును మనము సత్యముగా గ్రహింపవలయునని మీమాంస కలుగగా, ఒకేవృక్షమునకు గల అనేక పర్ణములవలెఅందరి అభిప్రాయములును సత్యముయొక్క భిన్నరూపములే అనియు, సందర్భమునుబట్టి సంపూర్ణతనుబట్టి అందేది ఉచితమో ఆ సత్య స్వరూపము తత్కాలమునకు అవలంబనీయమనియు వచించినాడు. ఈ సత్యము కేవల వాగ్రూపమే కారాదనియు, భావ రూపము, కర్మరూపము కూడా పొందవలయుననియు నిష్కర్ష చేసినాడు. సర్వజీవ సామాన్యమైన పరమా శయము మోక్షము. ఈ మోక్ష ప్రాప్తికి భగవదుపాసనమే మార్గముకదా: గాంధీజీ అభిప్రాయమున సత్యమే భగవంతుడు గాన మోక్షసాధకుడు సత్యోపాసకుడు కావలెనని హెచ్చరించినాడు ఆసాధనా విధాన మును గూడా ఆయన యిట్లు వివరించినాడు. మోక్షసాధకుడు అహంకార, వివర్జితుడు కావలయును. అనగా, 'నేను', 'నాది' 'నాకొఱకు', అను భావములను దరిజేరనీయరాదు. ఎదుటి వారి దోషము లెట్టివియైన విమర్శింపక ఉపేక్ష వహించి, తన దోషములెంత అల్పములైనను అధికముగా భావించి తీవ్రముగా విమర్శించుకొనవలయును. ఇట్టి సాధన వలన సృష్టియందున్న ఎట్టి అల్పవస్తువు నందైనను మనకు స్యూనతా భావము గాని, విరుద్ధభావము గాని ఏర్పడక గౌరవభావము ప్రేమభావము నెలకొనును. ఈ ప్రేమ భావము వలననే సాధకుని మనస్సునకు మహానంద ప్రాప్తి కలుగును. ఆనంద ప్రాప్తియే మోక్షప్రాప్తి. 'రసో వైసః' అను శ్రుతి వాక్యప్రమాణముచే భగవంతు డానంద స్వరూపుడే కదా:

అహింస, భూతదయ, సోదర మానవసేవ, మున్నగు ఈ భావములను మతములన్నియు బోధించును. అట్లగుటచేమహాత్ముడుజాత్యభ్యున్నతికై సాగింప

బడు రాజకీయములయందు పై ధర్మములను బోధించు మతములకు అత్యంత ప్రాముఖ్యము నొసంగవలయు ననియు, మతములకు రాజకీయములతో సంబంధ ముండరాదని వాదించువారికి రాజకీయ మనగానేమియో తెలియనే తెలియదనియు వక్కాణించియున్నాడు. రాముడు, జీసస్, మహమ్మదు మున్నగు మహాత్ములే ఉత్తమ రాజకీయవేత్తలనియు, వారే మానవజాతి మహోదయమునకు పూలబాటలు పరచిన పుణ్య మూర్తులు, సత్యధర్మ పరాయణులు. కావుననే భగవత్స్వరూపులనని గాంధీజీ కంఠోక్తిగ వచించి నాడు.

ధర్మ విషయముననేగాక కళా విషయమున గూడగాంధీజీ సత్యమునకే పట్టముగట్టినాడు కవిత్వాది లౌకిక కళలు అయథార్థములనియు, సత్యమొక్కటే యదార్థమగు కళయనియు, కావుననే, పై జెప్పబడిన మహాత్ములు మన ఆధ్యాత్మిక అభ్యున్నతికేగాక కళో పాసనా ఫలితమగు రసానంద జనకత్వ హేతువుచేత, ఏ కవికంటె, చిత్రకారునికంటె ఉత్తమ కళాకారుల నియు, మహాత్ముడు అభిప్రాయపడినాడు.

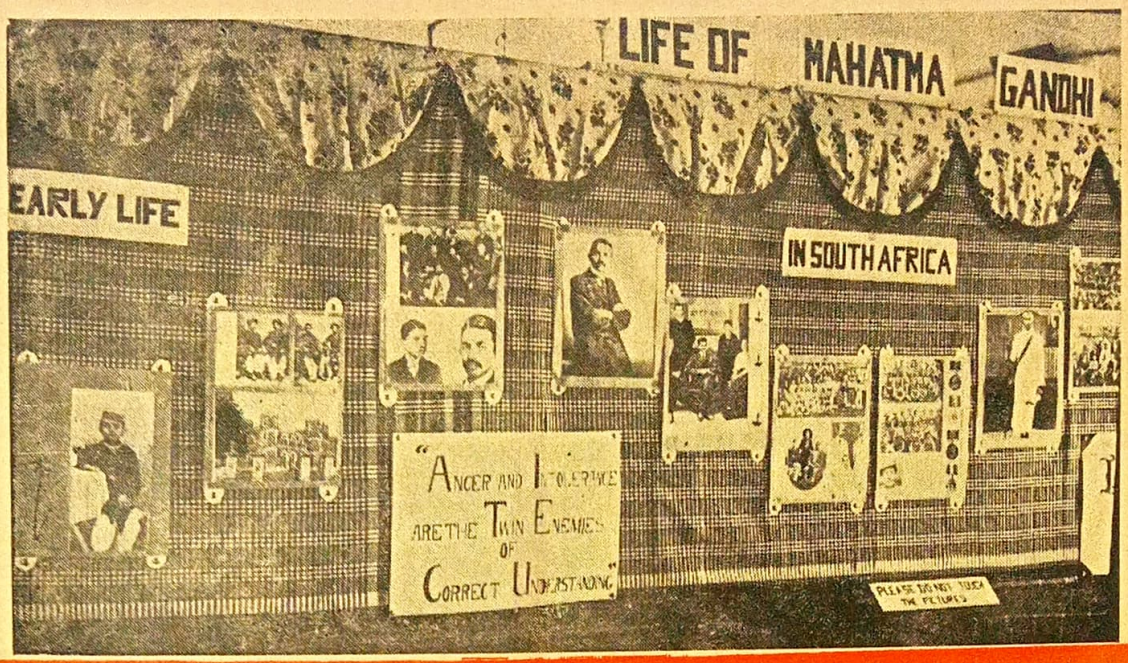
ఈ విధముగా, సర్వ ధర్మ సమాహారమగు సత్యము యొక్క సంపూర్ణ స్వరూప దర్శనమును పొందిన గాంధీమహాత్ముడు, దాని పరమోత్కృష్టతను గ్రహించి సమస్త మానవాభ్యుదయమునకు సర్వ ధర్మోపాసనమే సర్వ శ్రేయో బంధుర ఘంటాపథ మని ప్రవచించి ప్రవక్తకోటిలో చేరి వెలుగొందు చున్నాడు.

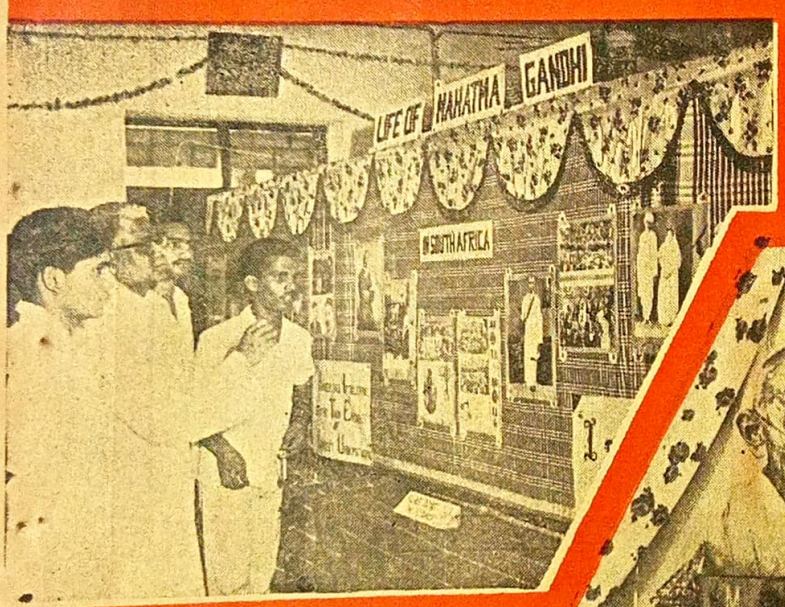
'సత్యముచేతనే జగము సర్వము క్రుంగకనిల్చె సత్యమే
నిత్యము సత్యమే శుభము, నీరజబంధుడు నీరజారియున్
సత్యముచేతనే గతులజ్రమము తప్పక యున్నవారు సౌ
మత్యము సత్యముంజెడిన 'మానవుడెందు సుఖంబునందునే'

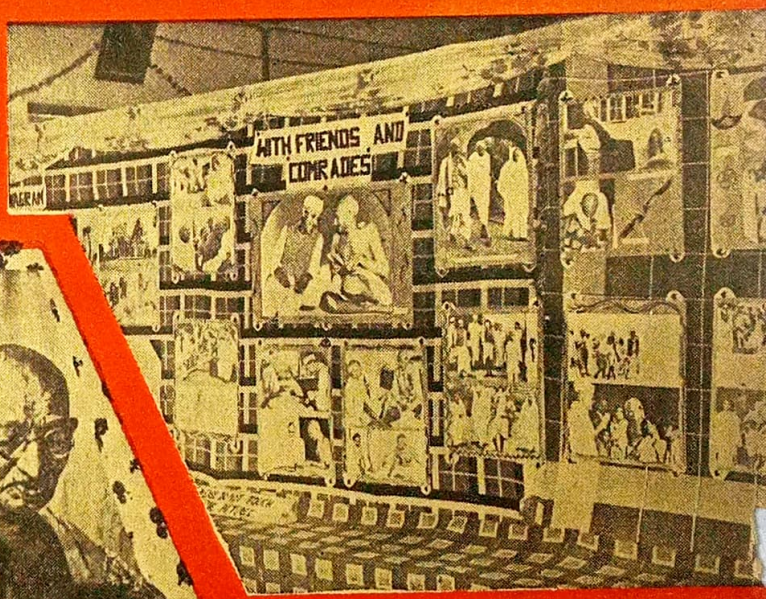
తిరుపతి వేంకటకవులు

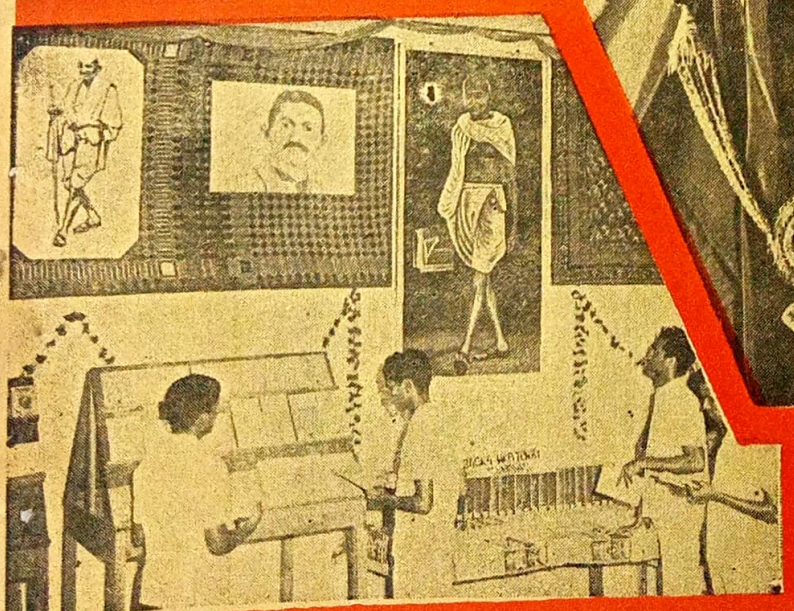
(గాంధీజీ శతజయంత్యుత్సవ సందర్భమున ఏర్పాటు చేయబడిన గోష్ఠియందలి ఉపన్యాస సారాంశము.)

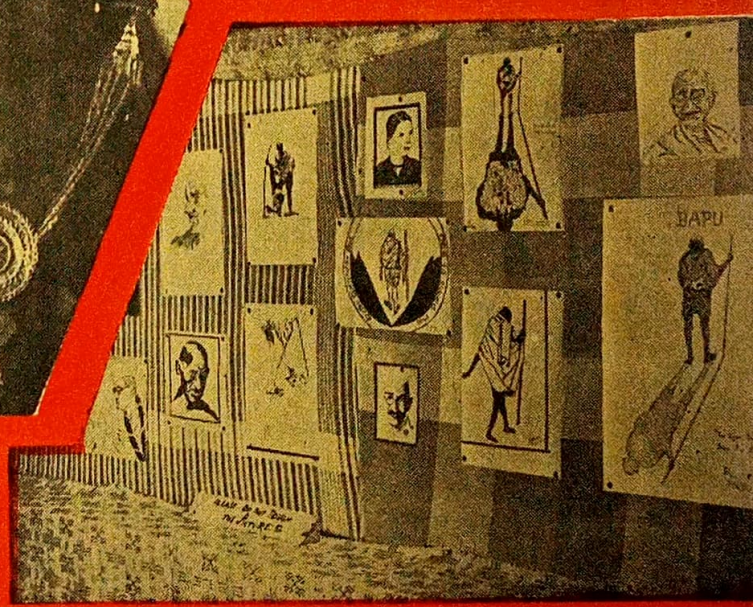
THE GANDHI EXHIBITION











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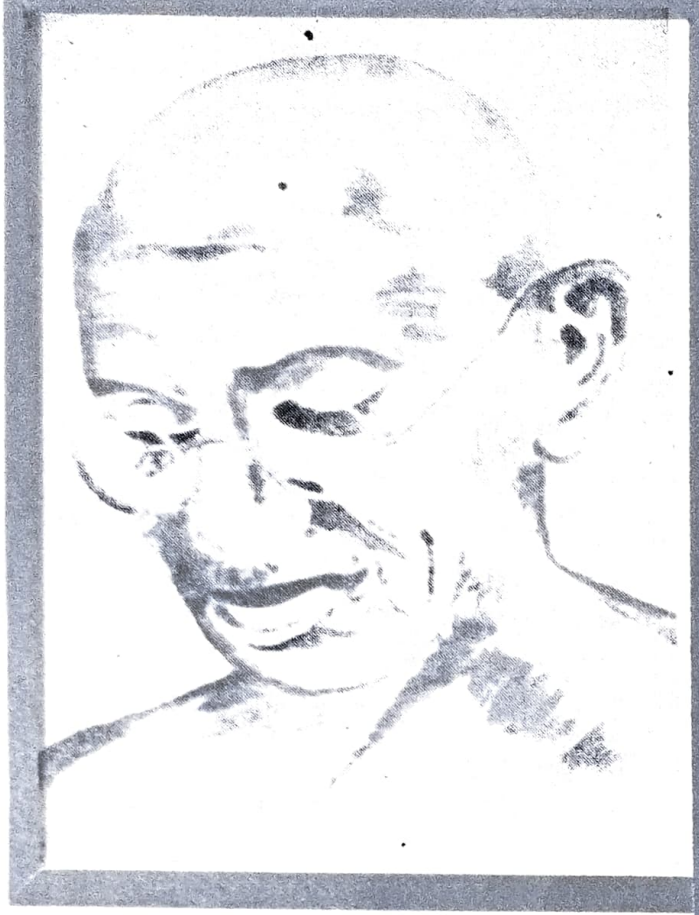
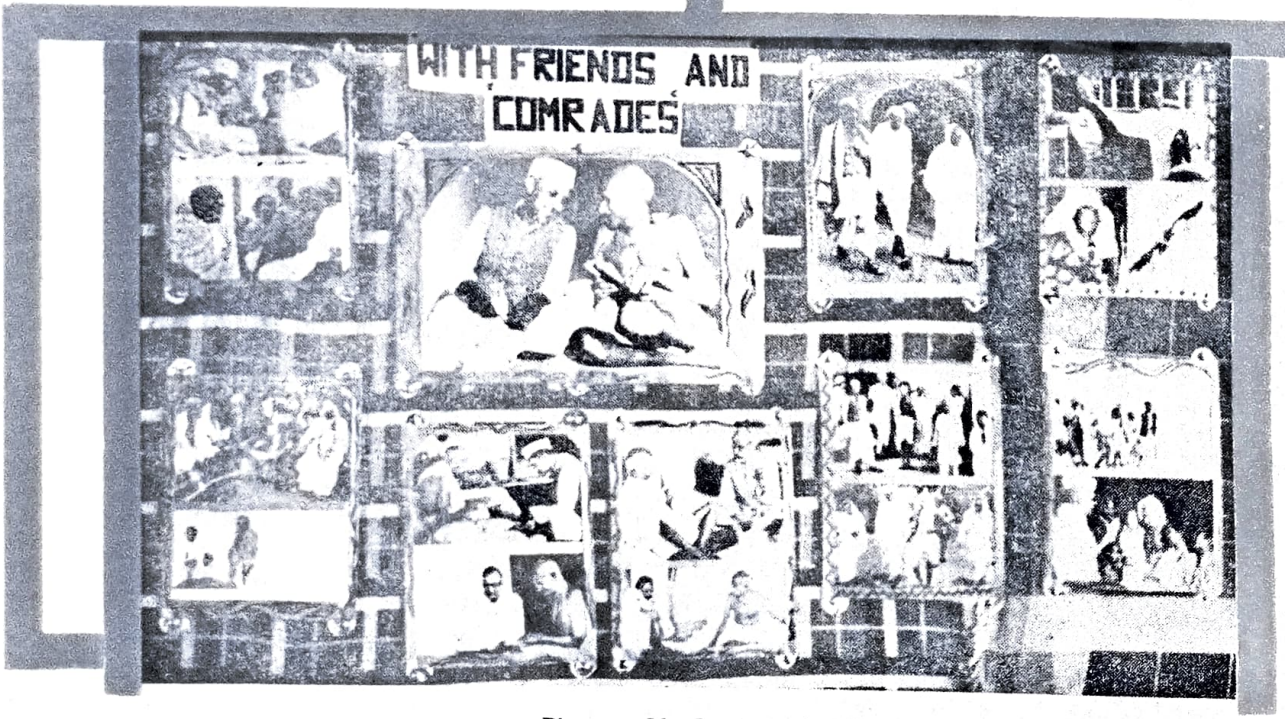


Gandhi Exhibition



Photos : Y. Gopichand, III B. Com.

Neoteny and Human Evolution

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The larva becoming sexually mature is known as neoteny. Man is speculated to be a neotenous primate. He may evolve into a Superman.

Human beings and many animals of diverse groups alike are viviparous i. e. they give birth to young ones, which resemble their parents in many characters. On the other hand, most of the lower animals lay eggs – fishes, amphibia, reptiles, birds and even some primitive mammals. A larva or a young one, as the case may be, hatches out of the fertilised egg under favourable conditions. If there occurs the larval stage, it is usually after a free-moving life gradually develops or rather metamorphoses into an adult. Normally the larva cannot reproduce sexually. But the larvae of certain animals become sexually mature, and begin to reproduce individuals of their own variety. This phenomenon of the larva becoming sexually mature, and reproducing, is known as 'neoteny'. Neoteny is a rare phenomenon found in some insects, lower chordates, salamanders, and some other animals. Man also is speculated to be a neotenous primate.

The Mexican Axolotl, a salamander of the genus Ambystoma, is a classic example of neoteny. Axolotl is actually a larval form of salamanders (Urodeles - Amphibia). It consists of three pairs of gills, tail fin, thin skin, and fish-like lateral sense organs, which are not seen in its adult. Owing to the non-development of certain endocrine glands, the further development of the larva is delayed. The reasons for the non-development of the endocrine glands that induce the further development in the larva are obscure. However, the abundant food supply, the comfortable aquatic life, may be supposed to be the reasons behind the prolongation of the larval stage The Axolotl grows in size and after a time reproduces sexually. Nevertheless, the larva loses all its larval characters if it is fed with a thyroid gland, or injected thyroxin.

Biologists of high rank have considered that neoteny is the means by which some animal groups have escaped the evolutionary trap. The evidence now available indicates that millipedes which are worm-like segmented animals and specialised for terrestrial life, form the link between segmented worms and insects via neoteny.

There is a belief that man has evolved from the great apes. Actually there are no perfect fossil (past remnant) records to bridge the gap between ape and man. This break in organic evolution is a permanent one, which perhaps can never be bridged.

An adult man in many ways is more similar to the baby ape than the adult ape. The similarities include the relatively high brain weight, the angle between the head

and the trunk, the retarded closure of the sutures between the bones of the skull, the form of the teeth, the flatness of the face, and the hairlessness of the body. This had led to the speculation that man is a neotenous primate. This hypothesis, known as 'the theory of neoteny', was first stated by Balt in 1926. It means that man (Homo sapiens) has escaped the evolutionary trap through neoteny. No doubt it provokes thought on the evolution of man.

I would like to conclude this article by throwing some light on the future evolution of man in the following way.

A well-known view is that a variation or a change in any organism into a new species is likely to occur when it is exposed to utterly unfavourable conditions through several generations ('The Origin of Species' Darwin). But there is a unique feature in living things known as 'adaptation' (adjustability). Perhaps man due to this high power of adaptability could combat the natural as well as the unnatural handicaps. Also, he is now waging war against nature by his inventions in the fields of agriculture, industry and medicine. It appears that there may not be any evolution in man for the time being. However, there is a lot of fiction about the 'Superman'. Will there be anything like the Superman? We do not know.

We are, it seems, at the dawn of the 'Space age'. Can modern man inhabit the moon? Though this is a big challenge to nature, the answer seems to be "Yes". "The Fantasies of yesterday's science fiction become the realities of tomorrow." Television and telecommunications are not a wonder for us. Computers or 'electronic brains' are being used in divers fields. Organ transplantation is gaining in popularity. If such is the rapidity of development in science, technology and medicine, why should not we expect that man will one day or other explore the moon? Surely, future generations will know of the people in Lunar City, though perhaps not in our time. However, the moon with her climatic conditions and solar radiations so different from those on earth will be an altogether new world. Consequently there may be a considerable evolution in man on the moon, and perhaps he may become a Superman there. If, however, he does evolve into a Superman, I think it not excessively philosophical to say that it will take several such evolutionary steps to reach Divinity, the destiny of mankind!

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The Jug - a short story

I. SAI PRASAD, P. U. C.

Lala Jhaulal had a four-storied building in one of the busiest streets of Kasi. He had rented out the ground floor to some shopkeepers, and it yielded him about three hundred rupees in the form of rent, enough to lead a confortable life. But he had never bothered to save money for any emergency. So when his wife suddenly demanded the round sum of five hundred, he was thunderstruck. However, he could not reveal his incapacity to fulfil such a small wish as that. So, quickly recovering from the shock, he assured her in his calmest manner that he would give her the money within a week.

"Ram, Ram," he grumbled in his whiskers. "What the deuce does she want five hundred for? That fat Jagadish wants me to renovate his shop. Not much; only a hundred and fifty. I told him not to ask for the moon. And now I have to find five hundred. One thing's certain. If money grows on trees, I haven't any of them planted in my garden." And Lala Jhaulal was very anxious.

Five days passed, but he could not find anyone to lend him the money. On the sixth, he got really worried and approached Mr. Misra, a good friend of his. But unfortunately he too was broke at that time, having married off his eldest daughter just two months back. However, Jhaulal was his special friend, and Mr. Misra promised that he would try, and if he did succeed he would bring the money by the next evening. It was cutting things pretty fine.

Jhaulal went home somewhat consoled. He knew that he could count on his friend. But all the same, when the evening of the seventh day came, Jhaulal was a prey to the acutest anxiety. So he went to the terrace and waited feverishly for his friend, at the same time keeping out of sight of his wife. The warmth of the evening sunshine on the terrace made him thirsty, and he called out to the servant to fetch him some water to drink. As his luck would have it, the servant was out on an errand, and when his wife in person brought him the water, Jhaulal nearly jumped off the terrace in consternation. However, she had been busy with the cooking, and had only found time to bring him a large jug of water. No tumbler. Jhaulal was far from complaining; not even though this jug happened to be a mis-shapen lump of clay he disliked intensely, although it was new.

Jhaulal swallowed his disappointment, and then began to swallow the water. To avoid wetting himself he went to the edge of the terrace and drank there. But because of his nervous state, the jug slipped from his sweaty hand and fell into the street. It was a crowded street. And Jhaulal could very well imagine the result of dropping a jug full of water into it

from that height. He slowly descended from the terrace, desperately hoping that the damage was not very much But when he reached the street.....

What had happened was not as serious as he had imagined. The jug had fallen on the canvas awning of a shop-front, then after soaking a customer from head to foot, it had broken through the rotten canvas and fallen on the unfortunate gentleman's foot.

The hapless victim was an English tourist; he hopped about vigorously, holding his injured foot and howling his pain and curses. Soon a large crowd had gathered, and Jhaulal, who felt awkward in a crowd, could not think of anything to do in such a situation, beyond reclaiming his errant jug. Luckily for him, the resourceful Mr. Misra arrived just then. In a few crisp words he sent the crowds on their way.

"Make way there, you lout! How am I to buy my evening supplies from this shop if you all stand in my way? Get on brother-in-law!" And the people quickly dispersed, leaving the Englishman, now seated in a chair nursing his foot, and the perspiring Jhaulal with his jug.

When the Englishman found speech once again, he wanted to have Jhaulal arrested. And Mr. Misra seemed to second the proposal warmly.

"It's the only thing to do with dolts like that, sir," said Mr. Misra in the hearing of the dumbfounded Jhaulal. "As long as he is loose, none of us is quite safe. Dropping his great big jugs on us from the roof-top!"

Then his eye caught the jug in question, and his mouth opened.

"But where did you get that jug from?" he asked in wonderment; and taking the object in his hand he caressed it fondly. "Give it to me for a hundred rupees," he asked.

And all the while Jhaulal stared, beyond words, beyond understanding, beyond even the power of closing his mouth. To embarass him even further, the angry Englishman seemed to be surprised too.

"Why do you want to pay a hundred for something worth a rupee at the most?" he asked, his curiosity aroused.

Mr. Misra took him aside and said confidentially.

"I am no fool sir. This jug is an antique of historical importance. This is the very jug with which a Brahmin gave water to Humayun when he was dying of thirst in the deserts of Sind. Ever since, it has been a treasured Mughal relic. But a hundred years ago, it disappeared from the museum. And how this man came to possess it I cannot imagine".

Now, as the Englishman heard this, his face brightened, and his eyes gleamed with greed. Gone was the pain. He fixed his eyes on Misra and said,

"Sir, as I collect old things of historical importance, I hope you will not object to my buying it."

"I am sorry, but I also collect these things," said Misra curtly.

The Englishman saw that this was no time for hesitation.

"Well, you offer a hundred. I make it a hundred and fifty," he said

"Then I offer five hundred," said Mr. Misra. And suiting his gesture to his

words, he flung down the money and seized the jug.

"I double it. A thousand!" said the Englishman with emphasis.

Mr. Misra looked crestfallen.

"That is all I have," he said.

The Englishman then snatched the jug from Mr. Misra and thrust the thousand rupees into Jhaulal's hands. He then walked away triumphantly, thanking Jhaulal who had been a spectator throughout this business.

"Well, won't you count your money?" asked Mr. Misra, addressing the still stupefied Jhaulal.

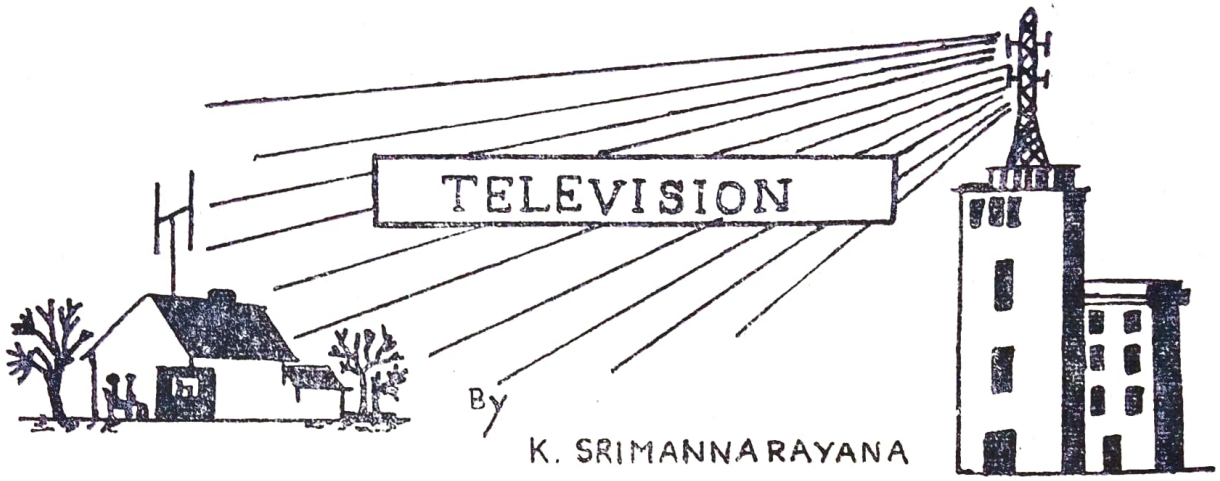
Only then did life return to Jhaulal's stricken senses, and he set about complying with his friend's request. Counting money is a joyful task, especially when the money has come so conveniently. Lala Jhaulal was so engrossed in counting that he did not notice anything else. By the time he had finished, Misra was nowhere to be seen. The whole episode seemed to have been a dream. Only the very real notes in his hand convinced him that it was not.

THE SONG OF ALEXANDER THE GREAT

At a certain entertainment, Alexander sang in a very agreeable and skillful manner, and his father Philip said to him: "Are you not ashamed to sing so well? It is enough for a prince to bestow a vacant hour upon hearing others sing, and he does the Muses sufficient honour if he attends the performances of those who excel in their arts."

If a man applies himself to servile or mechanical employments, his industry in those things is a proof of his inattention to nobler studies. For though a work may be agreable, esteem for the author is not the necessary consequence. We may therefore conclude that things of this kind, which excite not a spirit of emulation nor produce any strong impulse or desire to imitate them, are of little use to the beholders. But virtue has this peculiar property: that at the same time as we admire her conduct, we long to copy the example. The goods of fortune we wish to enjoy, virtue we desire to practice; the former we are glad to receive from others, the latter we are ambitious that others should receive from us. The beauty of goodness has an attractive power. It kindles in us at once an active principle, it forms our manners and influences our desires, not only when represented in a living example, but even in an historical description.

— *Plutarch "Life of Pericles".*



By
K. SRIMANNARAYANA
II B.Sc (M.P.C 1)

Television means seeing across space. The word comes from the Greek tele (at a distance) and the Latin video (I see).

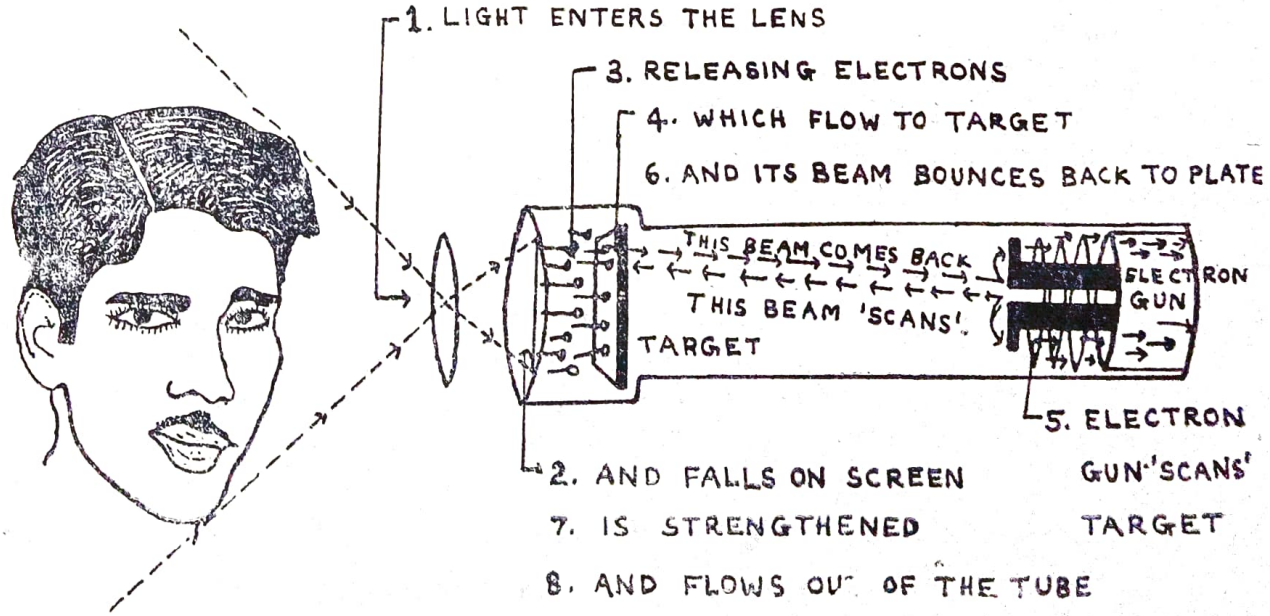
Television is the picture of an action, taken with a special camera and sent in the form of ultra-short radio waves across space to our receiver.

Television is first an action. then a picture, then electricity, then radio waves, then electricity again, and finally a picture again in our receiver – all in an instant.

Television contains mainly two parts. One is a camera in the station and the other is a receiver in our houses.

How the Picture begins :

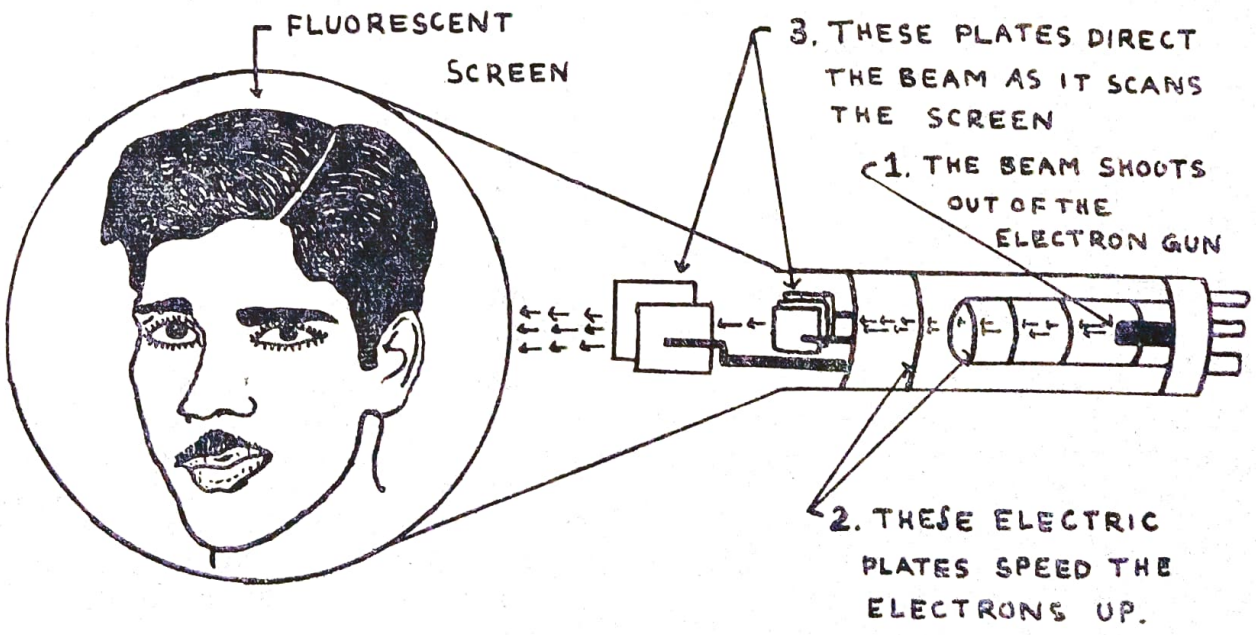
The television picture begins in the camera, without any film. This camera changes the picture into a short electrical picture which is sent out through wire and then across space. The heart of the camera is an electron tube. The picture of the object comes into this tube through



the camera lens and it is focussed on a screen that is sensitive to light. This screen is made up of thousands of tiny chemically coated spots. If a ray of light hits a spot, then it gives off microscopic charges of electricity called electrons. The spot sends more electrons if the ray of light is bright. The electrons shoot along to another screen called the target, hitting it so hard that they knock more electrons out of the target. These displaced electrons collect, leaving the target hungry for electrons. At the other end of the tube is an "electron gun" shooting out a thin stream of electrons, like a sten gun shooting bullets. The electron gun shoots these electrons a thousand times faster than the sten gun. This stream of electrons moves back and forth across the face of the target. Each sensitive light spot of the target collects these electrons from the stream. These electrons replace the electrons which were formerly knocked out from the target. But these electrons coming back from the target do not possess constant strength. But the stream of electrons leaving the electron gun, possess constant strength. This stream varies just as the light and shadow varied in the picture that came into the camera lens. The stream swings back and forth across the target just as our eyes do when we read a book. This process covers every point of the picture. This is called "scanning". Finally the stream bounces back to an electron collection plate, and this is called the "signal". The whole process is called the electrical reproduction of the picture in light that came into the tube. Before this signal flows out of the tube it is made much stronger by an amplifier. The electron beam scans so quickly that 25 separate pictures are sent out every second. This is fast enough to catch and send out whatever action is going on in front of the camera.

How the Picture is Received :

The picture is received by the following process. The aerial picks up the television waves from the air and they are carried by a special wire into the receiver. The most important part of our receiver is an electron tube, the partner of the one in the camera. This tube is called a "cathode ray tube". It also contains an electron gun similar to that in the camera tube.



The big end of the tube contains a fluorescent screen. The screen gives off rays of light as long as it is being scanned from behind by the beam from the electron gun. This is the screen of our receiver, and the rays of light are the television picture. Sometimes instead of seeing the picture directly, we see in reflected by a mirror, or projected by lenses into a larger screen. The beam of electrons in the cathode ray tube also changes just as the beam in the camera tube. It shoots out of the gun and scans the fluorescent screen in exactly the same way. The picture of the television screen is really built of 405 lines of light and dark, which we can see if we look closely. The beam repeats these 405 lines 25 times a second. We see these lines as a complete picture and the 25 pictures a second as a moving picture because our eyes do not work fast enough to notice the spaces in between.

Television Station :

A television studio is much like a film studio with cameras, mikes and sets. People of the studio construct new sets in a few hours by changing parts of the old sets. All workers in the studio have ear phones which are connected to a control room. The producer instructs the workers from the control room through a sound-proof glass window. The cameras and cameramen are moved by cranes from place to place. The microphone is attached to a mike-boom and can be moved to any side so that it does not appear in the picture. The sound waves of voices enter the microphone and are converted into electricity. Then they travel through a special cable to the sound-control desk in the control room. But we cannot see all these arrangemnts on the screen of our receiver.

The Engineers in the television department select the pictures from the monitors. Each monitor behaves like a television receiver. Some of these monitors are connected to the cameras. All the cameras take the pictures at the same time, from these pictures the producer selects the one to be televised. Before the show can be put on the air it has to be rehearsed in the studio. Television shows are much more complicated than the radio shows; they must rehearse from 2 to 10 times. All these rehearsals are managed by the producer before being sent into the air. Usually 3 or 4 television cameras are used on a studio production, each camera has four lenses mounted on a round plate called the "turret". Each lens take a different picture of the same object. The pictures from all the cameras travel through a cable to the control room. The producer selects one of the pictures to be televised.

A new development in outdoor broadcasting is the transmission to the main station by microwave equipment. This equipment is stored in a medium-sized van. All portable cameras and equipment are arranged in this manner. When this van reaches its location the cameras and mikes are taken out and put where they are needed. Sometimes they are on the roof of the van. The cables connect the cameras and mikes to the control desk in the van, just as the studio cameras and mikes are connected to the studio control room. The engineers work at the control desk in the same way as they do in the studio. Finally the van has to send the signals back to the studio or to the transmitter to be rebroadcast to our receiver. The signals are sent either through a coaxial cable or through a special radio link to the station transmitter. This radio link is called "microwave relay reflector". The microwave relay reflector on the roof of the van reflects these signals to another microwave relay reflector on the top of the station.

Sometimes television signals travel long distances with the help of relay stations. These stations are placed on hills or mountains 30 to 40 miles apart. On the top are big reflectors which scoop up the television signals to the next station. This equipment works automatically.

Obituary

SRI B. V. RAGHAVA RAO, B. Sc.,

BOTANY DEMONSTRATOR

Born: 22-11-1934 Died: 17-3-1969

Mr. Bandaru Veera Raghava Rao was born on November 22, 1934, the eldest son of Sri Bandaru Venkata Ramana Rao, retired Chief Ticket Inspector, Southern Railway. He had his collegiate education at P. R. College, Kakinada, and after working a short period as a medical representative he joined as a demonstrator in Botany, Andhra Loyola College, Vijayawada, on July 4, 1963.

Mr. Raghava Rao was unassuming, soft-spoken and ever cheerful. He was devoted to his work and to the students. He was always ready to help anyone in distress, whether students or Staff. In fact, he was very popular with the students who appreciated highly his readiness to help them at all times.

On his way to the College on March 17, he was fatally injured in a road accident. He died late that night. The Staff and students felt his loss very deeply, and the 18th was declared a holiday in his memory. They also expressed their sorrow and regret at his sad death in a condolence meeting on the 20th evening. Those whom the gods love die young, and we mourn the tragic end of this good and lovable young man.

May his soul rest in peace.

Use of Transistors in Music

A. BALAGANGADHARA TILAK, II B. Sc.

The transistor is an electronic device. It is very useful in the study of electronics. Transistors can be used in musical instruments. These electric music instruments are nothing but the transistorised Audio Oscillator which has got various oscillating frequencies chosen in a way to give the full octave range of musical instruments This instrument costs very little.

The Circuit :

The circuit used in Fig. 1 consists of a multivibrator which is tuned to operate in the frequency range required and a simple amplifier capacitance coupled to it. The frequency at which the oscillator works is altered by addition of resistances in series with R_2. The methods of tuning and key-board connections are discussed later.

Construction :

The instrument is built on a baseboard 12 × 18 inches of $\frac{1}{4}$ inch plywood. A square ($\frac{1}{2}$ inch) strip of wood is used to mark the outline of the resonator box, and is glued into position on the base-board as shown in Fig. 2. The top of the box is made of 1/8 inch plywood 12 × 4½ inches. A hole 2½ inches in diameter is cut in the centre of plywood with a fret-saw, so that a 2½ inch miniature speaker can be fitted facing into the box. The top is glued on to the box and the speaker is glued into its position over the hole in the top. On one

CIRCUIT FOR MUSICAL INSTRUMENT

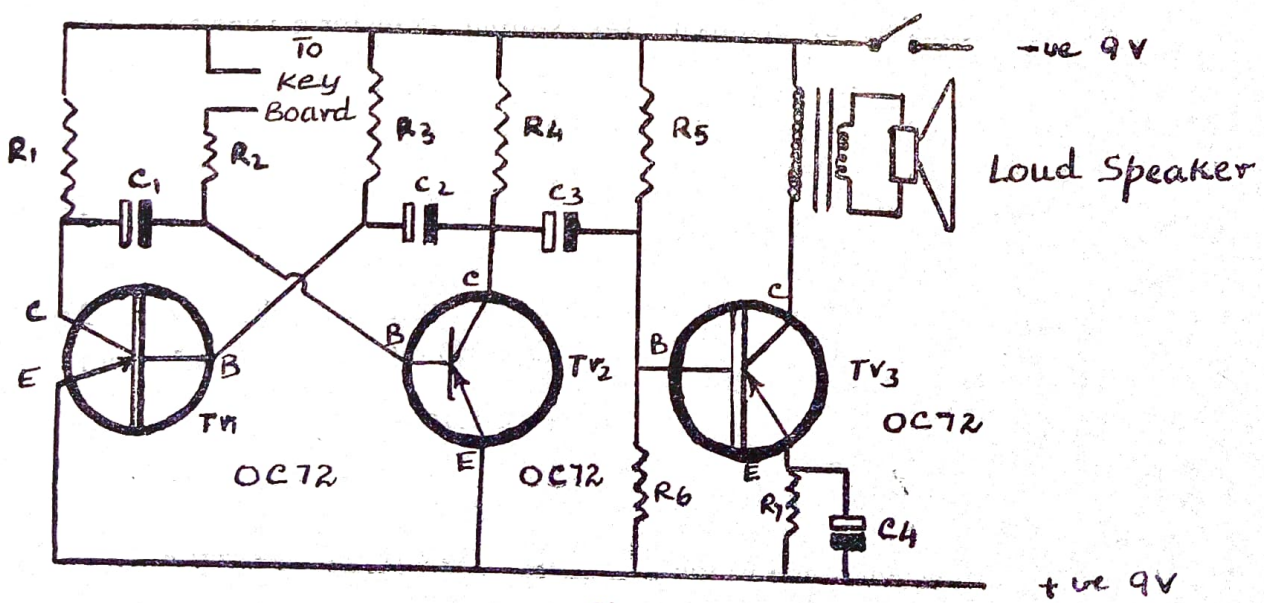


Fig. 1

side of the speaker two 4 inch lengths of ½ × ½ inch wood strip are glued 3 inches apart to hold the 4 inch square board on which the circuit is mounted. On the other side of a speaker two similar strips are mounted to steady the battery. Since an Eveready 276 pack battery is used, the strips have to be 2½ inches apart from each other. The battery is fixed by a rubber band.

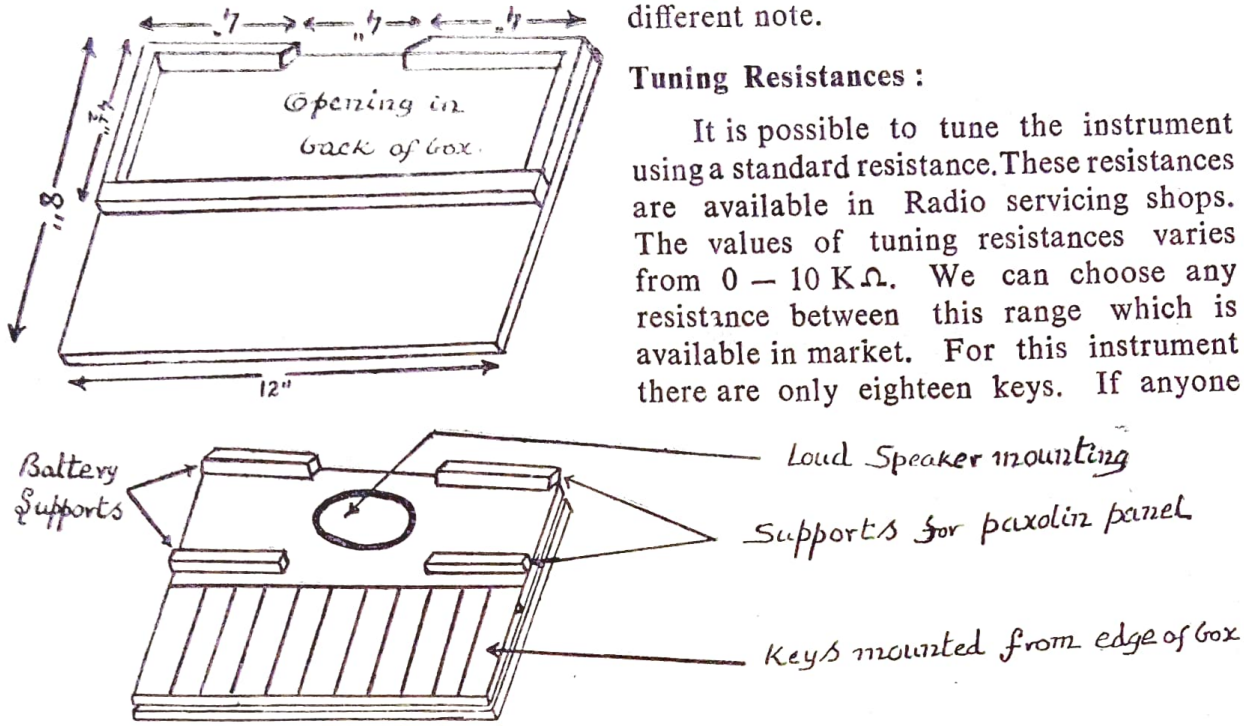


Fig. 2

The key board consists of eighteen strips of 4 × 2/3 × 1/16 inches. Each key has a thick wire contact in its underside with a length of thinner wire soldered to it. The keys are pressed on to a common contact which is a thick copper wire supported on four flexible 1/16 inch perspex supports, so that the key will give after contact is made; this gives the keyboard a more pleasant feel and reduces noise from the keys. The copper contacts are glued to their perspex supports.

When the key-board has been completed, the elctronic circuit may be screwed on to its supports. One of the terminals leading to the keyboard is connected to the common base contact of the key-board. The second terminal is connected through a tuning resistance to the key, each key having a different tuning resistance for a different note.

Tuning Resistances :

It is possible to tune the instrument using a standard resistance. These resistances are available in Radio servicing shops. The values of tuning resistances varies from 0 — 10 KΩ. We can choose any resistance between this range which is available in market. For this instrument there are only eighteen keys. If anyone wants to increase the number of keys he has to select the various resistances between the range 0 – 10 KΩ only.

You will need :

(1) Transistors :
2SB77 or OC72 or AC128 — 3 pieces

(2) Output Transform Type ST — 1 piece

(3) Loud Speaker 2½" size – 8 ohms impedence — 1 piece

(4) Battery of any kind 9V — 1 piece

(5) Condensors –
C_1 = 1 mfd, C_2 = 1 mf, C_3 = 2 mfd, C_4 = 10 mfd (each only one)

(6) Resistors –
R_1 = 1 KΩ, R_2 = 2·2 KΩ,
R_3 = 2·2 KΩ, R_4 = 1 KΩ,
R_5 = 39 KΩ, R_6 = 4·7 KΩ,
R_7 = 150Ω (each only one)

Father of Electricity - Michael Faraday

P. KRISHNA RAO, II B. Sc.

Today if we get electricity at the throw of a switch, if giant dynamos roar to produce it for us and very big electric motors run our machines, we owe it all to one great man, Michael Faraday, who died a hundred years ago leaving behind him a record of spectacular achievement.

The life of Faraday reads just like a romance out of the pages of fiction. He was born on September 22, 1791, the son of a blacksmith. He had a hard time of it in his childhood. He wrote in his diary, "My education was of the most ordinary description, consisting of little more than the rudiments of reading, writing and arithmetic at a common day-school. My hours out of school were passed at home and in the streets." Faraday's job as an errand boy in a book-shop at the age of thirteen proved to be the turning-point in his life, for he not only bound the books but read all of them voraciously, in particular the scientific books. Two of them he still recalled in his old age as having impressed him deeply — the articles on electrical subjects in tne "Encyclopaedia Britannica" and Mrs. J. Marcet's "Conversations on Chemistry". Sir Humphry Davy was the great chemist of his day. In 1810, Faraday, being a book-binder, had the opportunity of listening to Davy's lectures on science. The young and eager Faraday was swayed by all that he heard. He took notes of Davy's lectures and bound them. Declaring his eagerness to be in the service of science, he showed Davy the notes of the lectures. Sir Humphry took him on as a Laboratory Assistant in the Royal Institute of which he was then the Director. Science was to be Faraday's vocation and the chance of working under Davy, the most renowned scientist of his day, was too rare to be missed. He seized it at once in 1813.

Sir Humphry left on a tour of the continent and he took along with him the young Faraday. On the tour, Faraday saw the leading scientists of his time and visited many big laboratories. On returning

from the tour, in 1815, Faraday plunged into work at the Royal Institute where his position was modest and his interest in Physics and Chemistry deep. With his experimental skill he could provide practical proof of his ideas.

Soon, the gifted scientist discovered benzene, conducted experiments on steel and produced the earliest "Stainless steel". He observed the tendency of pieces of ice to become one when pressed together. He did research on glass-making and produced a kind of heavy glass. Despite all these achievements, Faraday went on digging deeper and deeper in the fleld of electricity and magnetism.

In 1820, a Danish scientist named Oersted, had made the discovery of a magnetic needle reacting to the flow of electric current in a conductor kept parallel to it. Faraday set out to explore the relationship between electricity and magnetism. He reasoned that if a current in a conductor could make a magnetic compass turn, then a current-carrying conductor should turn in a magnetic field. Using a big bar magnet, he proved this to be true: a current-carrying coil turned in the field of the magnet. This was the genesis of the modern electric motor which is an indispensable tool in science and technology today.

The gifted scientist was bold enough to believe the possibility of several principles in the field of electromagnetism. He found that when two coils of wire, insulated from each other, were wound on an iron ring, and one of them was connected to a battery, an electric current flowed immediately in the other coil also. This is the famous principle of electromagnetric induction. Still, there was the problem of producing electricity by the use of a magnet. Was there any good way making a magnet induce a constant current in a coil? Faraday was certain that it must be possible, and it was remarkable that the mind of the genius grasped the essentials of the observations made with the coil on the cardboard cylinder. There was a current only when there was movement of the magnet relative to the coil.

Later he devised the machine of the modern giant dynamo which, turning due to the force of steam or wind, produces electricity in the big power houses today. Thus Faraday established himself as the father of electricity with which we try to create *Utopia* in this world.

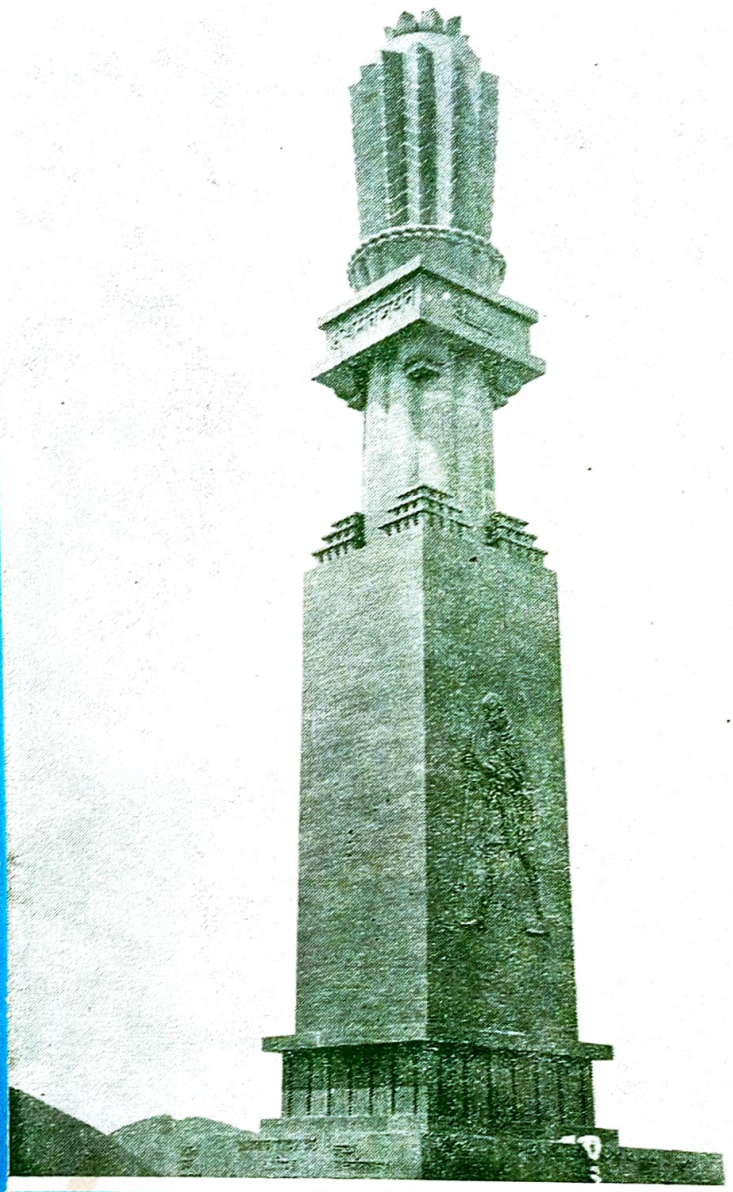
Inspite of all these great achievements, Faraday's mind was restless. He laid the historic foundations for the modern field theory and the relativistic revolution in Physics. The process of electrolysis owes much to Faraday. In commemoration of his great work in this field, the unit of quantity of electricity is named after him – Farad (equal to $9{\cdot}65 \times 10^4$ couloumbs). All this was a colossal achievement. Honours and distinctions were showered upon Faraday lavishly. Finally he became the Director of the Royal Institute. In 1858, he was awarded residence by the Queen at Hampton Court. Sir Humphry Davy declared proudly, "The greatest of my discoveries is Faraday".

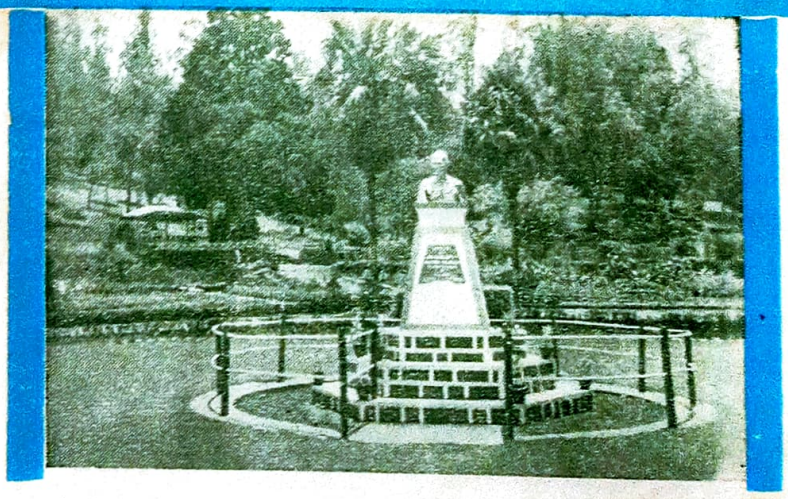
It is doubtless that Faraday was not only one of the greatest minds of all ages, but also one of the finest men. He did not care for material gains : he never patented any of his discoveries. He married but had no children. Instead, he left to posterity the science of experimental electromagnetism. He died on 25th August 1867, but will remain one of the great immortals in science for ever.

While India lay cramped and divided, betrayed by its own idealism, it was called upon to meet the greatest trial in her history, the challenge of Western imperialism. For the Aryans and the Muslims may have deprived a few Dravidian and Hindu dynasties of their rule in India, but they settled down among the people and their achievements became India's heritage. But here was a new impersonal empire, where the rulers were over us but not among us, who owned our land but could never belong to it. So disintegrated and demoralized were our people that many wondered if India could ever rise again by the genius of her own people, until there came on the scene a truly great soul, a great leader of men, in line with the tradition of the greatest sages of old – Mahatma Gandhi. Today no one need despair of the future of the country, for the unconquerable spirit that creates has already been released. Mahatma Gandhi has shown us a way which, if we follow, shall not only save ourselves but may also help other peoples to save themselves.

— **Rabindranath Tagore,**
"On Mahatma Gandhi"

Honoured in Stone on Gandhi Hill, Vijayawada ....



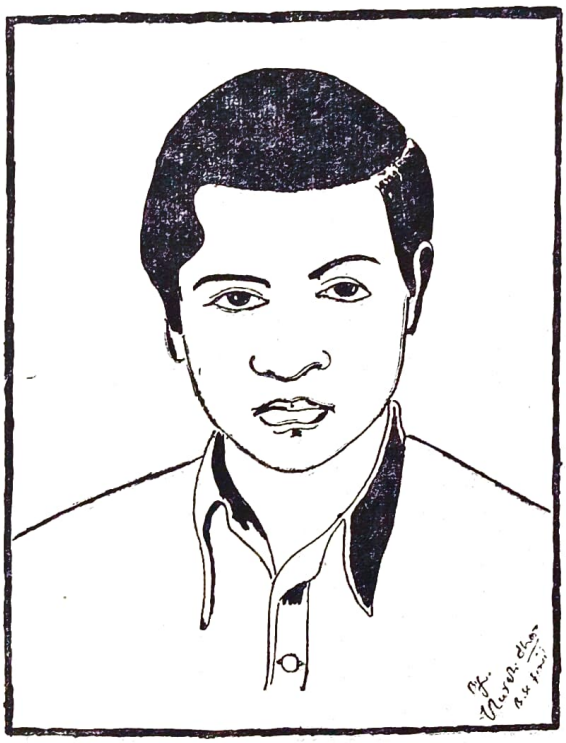


. . . in bronze in a setting of natural beauty, Bryant Park Kodaikanal.

Srinivasa Ramanujan

V. MURALIDHAR, III B. Sc.

Mr. Ramanujan was born at Erode in an Orthodox Brahmin family in 1887. His father was a clerk in a cloth-merchant's shop in Kumbakonam. It is easy for us to infer the financial status of his family. As his father was residing at Kumbakonam, a good cultural centre on the banks of Kaveri, it was possible for Ramanujan to receive his high school education. Even at the age of eight or nine, he was recognized to be an abnormal child and by the time he was thirteen, he began to show his exceptional abilities in mathematics.



He was able to discover for himself the famous formula attributed to Euler (1707–83)

$$C^{i\theta} = \text{Cos}\,\theta \times i\,\text{Sin}\,\theta.$$

Ramanujan was a bit disappointed to notice this result in Loney's Trigonometry Part II. But, this did not deter Ramanujan's self-study of mathematics.

Until he was sixteen, he never saw any book on mathematics which was worth mentioning. At that time, the number of books on mathematics was small and those available in India was smaller. But, at this time, observing the abnormalities of Ramanujan a friend borrowed for Ramanujan a rare and interesting book entitled, "Synopsis of Mathematics" by Carr, which caught the imagination of Ramanujan. This book contains lists of formulae and more important results in mathematics classified into sections on Algebra, Trigonometry, Calculus, Analytical Geometry and so on. It contains 6165 theorems arranged in a systematic manner, there not being much proof of these results.

Through the new world thus open to him Ramanujan's delight knew no bounds. He tried to prove all the formulae by himself. As he did not have any other book to guide him, he felt that every proof and every result he obtained was a piece of research work. He used to say that the Goddess of Namakkal inspired him with

formulae in his dreams. It seems he used to get up suddenly from sleep and write down some formulae but he would forget them by the time he got up next morning. The next day he tried to verify the results he had written down the previous night.

All this happened when he was in high school and all went well with him in the high school. He passed the Matriculation examination of Madras University in December 1903 and in January 1904 he joined in the first year of F. A. Class in Government Arts College, Kumbakonam. He was awarded the Subrahmanyam Scholarship which goes to the best student in English and Mathematics. By this time his devotion to Mathematics was increasing very fast and he was neglecting all other subjects like English, Physiology and so on. He might be physically present in the class room but his mind was pre-occupied with mathematical problems. So, inevitably he failed to secure promotion to the second year class and with that the scholarship was discontinued.

Disappointed by his failure and influenced by a friend, Ramanujan left home and wandered for some time in Andhra. He returned home and rejoined the college. As he did not put enough attendance, he was not allowed to take the examination. In 1906, he joined Pachaiyyappa's College but falling ill he returned to Kumbakonam. In 1907 he appeared for F. A. as a private candidate but failed and this was the end of the student career of Ramanujan.

In 1909 he got married and to support his family he had to search for a suitable job, but none was available because of his unfortunate college career. He somehow got into touch with two influential persons in Madras. They were Prof. P. V. Seshu Iyer of the Mathematics Department of Presidency College and Sri Rama Chandra Rao, Collector of Madras. Both of them were interested in Mathematics and so were fascinated by Ramanujan's remarkable results in Mathematics. Inspite of their efforts, Ramanujan could get only a job as a clerk in the Madras Port Trust on a salary of Rs. 40/- per month. By this time he was twenty-five and thus all these years nothing really helped him to improve his talents as a mathematician and so his genius never again had a chance of full development.

The unending efforts of Seshu Iyer and Ramachandra Rao bore fruits when they were able to introduce Ramanujan to two Englishmen : Sir Francis Spring and Sir Gilbert Walker. They were able to arrange for a scholarship of Rs. 75/- a month. Also he was encouraged to contact Professor G. H. Hardy of Cambridge, an authority on topics in which Ramanujan was interested. This was the beginning of a new chapter in Ramanujan's life.

Ramanujan began regular correspondence with Prof. Hardy from 1913. He gave the results of his private work in his letters. Prof. Hardy felt that collaboration with Ramanujan must produce wonderful results. With some difficulty he was able to get Ramanujan to England in the year 1914. Here Ramanujan had three full years of uninterrupted mathematical activity; the results of his researches were all published in journals of high repute. During those three years he could understand the trends of mathematical progress and learnt more of mathematics than he knew in a systematic way.

Ramanujan was honoured by being elected a Fellow of the Royal Society and a fellow of Trinity College in 1918. He was the first Indian to be elected to either society.

It is interesting to note that works that depend on Ramanujan's work either directly or indirectly are numbered in thousands to date. A lot more papers are expected to come up in future.

While in London, being an Orthodox Brahmin, Ramanujan was a strict vegetarian and cooked his own food himself. This caused a great upset in his health. Because of poor health, he had to return to India in 1917. But, he never really recovered. Even after returning to India in 1917, he continued his research activities but as fate would have it, he died in 1920. Madras University came up with the proposal to appoint him as professor but the decision was too late.

The tragedy of Ramanujan is due not only to his early death but also due to lack of encouragement while he was young and active. It is the hope and wish of every one that such tragedies do not recur. Let us hope some day another Ramanujan will be born to unravel the treasures written down in the copies of Ramanujan's note books.

THE GREATEST ULTIMATE DEVELOPMENT

The greatest discoveries will be made along spiritual lines. Some day people will learn that material things do not bring happiness and are of little use in making men and women creative and powerful. Then the scientists of the world will turn their laboratories to the study of God and prayer. When that day comes, the world will see more advancement in one generation than it has in the last four.

— Dr. Charles Steinmetz.

The Teaching of Mathematics

P. SIVANARAYANA, M. A., M. Sc., Department of Mathematics.

The study of Mathematics may be pursued in either of two opposite directions, the constructive direction and the direction of logical simplicity. The constructive direction proceeds towards gradually increasing complexity – from integers to fractions, from real numbers to complex numbers, from addition and multiplication to differentiation and integration, and on to higher maths. The direction of logical simplicity proceeds by analysis to greater and greater abstraction. The purpose of abstraction is to find more general ideas and principles in terms of which our starting point can be better defined or deduced. While modern maths is in the line of logical simplicity, the curricula taught in our schools, colleges and universities are in the constructive direction.

In advanced countries like the U. S. and Russia, school and college maths is being fast oriented to keep pace with the tremendous and rapid advances in science and technology. The purpose of this orientation is to make education for the future more realistic, purposeful and pragmatic. Such education lays stress on problem-solving and the ability to think. Of course, thinking must be based on facts and to find the right facts is more important than solving problems. The education of the past asked, "What are the answers ?" Education for the future asks, "Where and how can I find the answers ? "

The development of maths and the broadening of its applications have outrun our curricula and thus substantial changes in the curricula are long overdue in our country. The syllabus has to keep in view the readiness of maths to solve mathematical problems raised and presented by Physics, Chemistry, Biology, Economics, industry, Psychology and a host of other related disciplines. In fact, more maths is needed for Mathematical Biology than a graduate engineer has. Maths education might also solve the dilemma of computers – should we study maths to build computers, or build computers to have more leisure to study maths better ? In these matters the new mathematics is more vital and challenging than the old, yet how thoroughly understandable.

The new maths covers solving simple equations, handling problems of logic requiring a certain aptitude, and emphasizes the structure of maths. This last deals with the basic principles and properties common to many mathematical systems. Youngsters of former generations have found the study of the old maths a dull drudgery. By contrast, in advanced countries the new maths has stirred up more public interest than any other educational reform in this century – from teachers, from students, and even from parents. The consensus of opinion seems to be that the new maths is the lively third R.

There is also a great need for new thinking on old topics. In the study of linear and quadratic functions, graphs, are very handy to amplify and define the scope of the outline for college maths. A study of the graph of the quadratic function $ax^2 + bx + c$ shows us the role of a, b, or c in determining its behaviour. The idea of sets is good in explaining equations, inequalities, graphs, loci, and functions. The old material on Permutations, Selections, and the Binomial Theorem may be taught from a new point of view using simple notions of sets and subsets. The traditional maths – algebra, geometry, trigonometry – is still the hard core of the subject; but the distance between the core and the newer developments can be bridged only by new methods of approach.

Inadequacy in maths closes many doors to young men, not only in engineering and the physical sciences, but also in new and important areas such as social and biological sciences, business and industry. It would be most unfortunate to attempt to justify the study of maths solely as a preparation for a wider and ever-increasing range of applications. Maths itself is a solution of daily human problems with the help of abstraction. Both teachers and students should come to realize that the study of maths is a vital and shining example of man's creativity, one of the great cultural achievements of the ages. Few subjects can rival its ability to stimulate the enquiring mind.

A maths teacher should pay attention to instruction in ideas, notations, and facts. The best mathematical proofs are usually short, direct, and penetrating. A thorough grounding in the logic of maths is essential. The maths teacher should make his pupils realize that the power of reasoning is as important to the mathematician as skill to the painter. But the power of reasoning alone does not make a mathematician. The subtle chief quality that makes for brilliance in any field is imagination. And the scope that abstraction gives to the imagination is something that is not readily perceived or appreciated.

The first sphere in which imagination might be used is in framing the mathematical syllabus at all stages of study. In making changes the opinions of maths teachers and professional mathematicians might be profitably sought. They alone are qualified to assess the current value of any topic in maths. But a mere change of subject-matter is not enough. It must go hand-in-hand with good teaching. The functions of a maths teacher are now becoming more complex – to help and guide the student, and to explain the subject matter. A poor curriculum well taught is better than a good one badly taught; but a good and well-taught curriculum is the only acceptable goal. Quality in the syllabus, and skill in the teacher — this combination alone can effect the kind of improvement India needs now.

To get good teachers, they should be provided opportunities to acquire the requisite knowledge. Good teaching tools also should be put in their hands – quality text-books, teachers' guides and new books. Then they have to keep abreast of their profession by keeping in touch with the best and most recent developments all over the world – study groups, self study, and seminars.

Also, contests like the International Mathematics Olympiad could be held annually. "Olympiad" is perhaps not a happy name, since olympics are held only every fourth year, and they are contests of physical rather than intellectual prowess. Intelligence and knowledge are no less worthy of admiration

than strength and agility. Maths contests should be held to encourage the most intelligent and knowledgeable to demonstrate their insight, initiative and logic in solving mathematical problems; the problems should require no special knowledge outside the normal college syllabus. These problems must be original and not taken from any book or magazine.

[Here is the kind of problem I have in mind; it is from the Sixth International Mathematics Olympiad; to solve it you need only be able to count up to twenty, and to think logically. "Seventeen scholars correspond with each other on three separate subjects (say, philosophy, history, and linguistics). Each of these men writes to all the others without exception on each of these three subjects. Each piece of correspondence is on one subject only. Prove that among the seventeen, there are at least three (or more) men whose correspondence with one another is always on the same subject." I leave you to solve this problem, only remarking that the first step is to understand that the proposition to be proved actually requires a logical substantiation.]

Veteran university professors and college teachers may be drafted for the Mathematics Olympic Committee. Of course, the results of the Maths Olympics need not reflect on the mathematical ability of the losers, since the "match temperament" is not as desirable in matters academic as in athletic sports.

LOOK TO THIS DAY

Look to this day!
For it is life, the very life of life.
In its brief course lie all the varieties and realities
of your existence :
The bliss of growth ;
The glory of action ;
The splendour of beauty ;
For yesterday is already a dream, and tomorrow is
only a vision ;
But today, well lived, makes every yesterday
A dream of happiness, and every tomorrow a vision
of hope.
Look well, therefore, to this day!
Such is the salutation of the dawn!

— *From the Sanskrit.*

Science and Religion

N. PRAKASH BABU, II B. Sc.

"Science – in other words, knowledge – s not the enemy of religion, for if so, then religion would mean ignorance," said Oliver Wendell Holmes.

Science discovers the secrets of the universe and aims at the conquest of the forces of nature. Religion starts with faith in the Supreme being, the Creator of the universe, and aims at defining man's relations with Him. Science and Religion have apparently different aims and objects, yet in fact they act and react on each other.

Religion is perhaps as old as mankind. Even in earliest times man had some idea of a higher power, a superior, unknowable force pervading and controlling the universe. The earliest forms of man's worship of serpents, stones and statues is clear proof of his belief in an All-powerful Creator. Science is of more recent growth. The earliest phases of Science may not be more than four or five thousand years old, while Modern Science began only in the fifteenth century. But Religion is very much older, and before Science made its appearance Religion was the chief force guiding and governing human thought and conduct The supremacy of religion however gave rise to many evils. Religion encouraged superstition and other evil practices. The heads of various religions assumed almost dictatorial powers over their followers. The true spirit of Religion was ignored on account of these developments. But with the beginning of Science, many of these evil growths were badly shaken. The conflict between Science and Religion thus began.

The conflict between Science and Religion shows how truth has to suffer in order to establish its claims. Pioneers of Science had to face numerous difficulties. Galileo, for instance, was thrown into prison for his new theories about heavenly bodies. In the 19th century also, Darwin's theory of Evolution gave rise to angry opposition from the Church, since his theory cut across the Biblical version of the creation of mankind from Adam and Eve. The Churchmen raised the cry, "Religion in danger", and pressed for the persecution of such scientists. Thus all those who departed from the accepted Biblical theories about God and the universe were regarded as the enemies of mankind and Religion. Numerous attempts were made to suppress the voice of reason and truth. But truth eventually prevailed : Science held its ground. Many who had come forward to laugh at Science became its champions and followers. Before the nineteenth century had run its course, the triumph of Science was complete.

The rapid progress of Science changed the face of the world beyond recognition. It conferred unheard-of comforts and conveniences on mankind. Time and

distance, disease and pain were rapidly conquered and man seemed to be the master of his surroundings. These developments gave rise to the belief that man is all-powerful and God a superfluous being. People lost faith in Heaven or Hell, God or the Supreme power. Religion seemed to be dethroned from the heart of man and Science reigned in its place.

But the path of Science did not ultimately prove as smooth as its worshippers had thought it would be. It did provide bodily comforts, but at the cost of man's moral and spiritual development. It turned man into a sceptic, a creature without any faith. The loss of such faith brought the baser side of his nature into free play. Man became dishonest, selfish and proud. It destroyed man's simple faith, fellow-feeling, affection and kindness. The gulf between the rich and the poor became wider than ever before. The widespread use of machinery subjected millions of human beings to the evils of economic exploitation, unemployment, crowded, congested cities, and the growth of slums. Above all, the use of Science in the manufacture of weapons made war increasingly easy, horrible and destructive.

In fact, Science alone cannot give peace and happiness to mankind. Science must be allied to Religion. Science makes man materialistic, but Religion upholds his faith in God, in the higher and spiritual values of life. It must be admitted that there are more things in heaven and earth than are dreamt of in Science. Without moral and spiritual values man's life is no better than a beast's. It is on accounnt of this neglect of moral and spiritual things that Science has been applied for destructive and immoral puroposes. If this state of affairs continues, Science will bring about the complete ruin of mankind and civilization.

People have therefore got to realize that there is no real conflict between Science and Religion. Their approach towards life is, of course, different, but their goal is the same. Science follows the path of reason and intellect. Religion travels the road of faith and belief. But both aim at the discovery of the truth. Religion without Science degenerates into superstitution. Science without the help of Religion gives rise to materialism and lack of faith. Science, to speak the truth, has only purified Religion, whereas Religion has given a touch of beauty and mystery to Science. Science strengthens the work of Religion. A true scientist is not an unbeliever or an irreligious person. Religion, as understood in the past, will never come into its own again; Science gives the world a Religion which is rational, purified and free from the evils of false authority and superstition.

The Meaning of Beauty and Of Art

P. KRISHNA RAO, II B. Sc.
K. ANJANEYULU, II B. Sc.

"A thing of beauty is a joy for ever,
Its loveliness increases..."

Says John Keats. The poet simply admired beauty without defining it. When a work is done nicely or perfectly, we say that it has been done beautifully. An object or a quality is beautiful only when our hearts dwell on it because of its pleasing quality. The idea of beauty is different from beholder to beholder, depending on the mentality or taste of the person concerned. Another aspect of beauty is explained by Father Hopkins in his poen *The Windhover – To Christ Our Lord :*

"No wonder of it : for sheer plod
makes plough down sillion
Shine, and blue-bleak embers, ah,
my dear,
Fall, gall, gash themselves,
and gush gold-vermilion."

According to Hopkins, any human experience is beautiful, no matter how dull or agonizing, if consecrated to God. Thus the idea of beauty depends upon the devotion of the person who illustrates it.

How are we to define beauty? Why do we admire beauty? Why do we try to create it? Apart from the psychology of it, let us broadly define beauty as any quality by which an object or a form pleases the beholder. Ever since the creation of man on earth, it is an accepted fact that every human being, irrespective of his mentality, tries to create beauty in some way or other.

Again, an object or a form that satisfies the desire of a person will seen beautiful; even coarse food is beautiful to a starving man. Primitive man seldom thinks of selecting woman because of her beauty; he thinks rather of her usefulness, and therefore never rejects a bride on the grounds of ugliness. Primitive man's sense of beauty baffles and amuses us, for it is so different from our own. Throughout Africa it is the fat woman who is accounted loveliest.

Again, the controversial sense of external or physical beauty is still more highlighted by what we call Mother Nature. As far as Nature's sense of beauty is concerned, she bestows more vivid colours on males than on females – at least among birds and animals. The cock and the peacock wear brighter plumage than the hen and the peahen. Nature's beauty has formed the theme of the songs of many Romantic poets, notably Wordsworth.

Physical beauty is controversial, relative, and blooms to its fulness only to

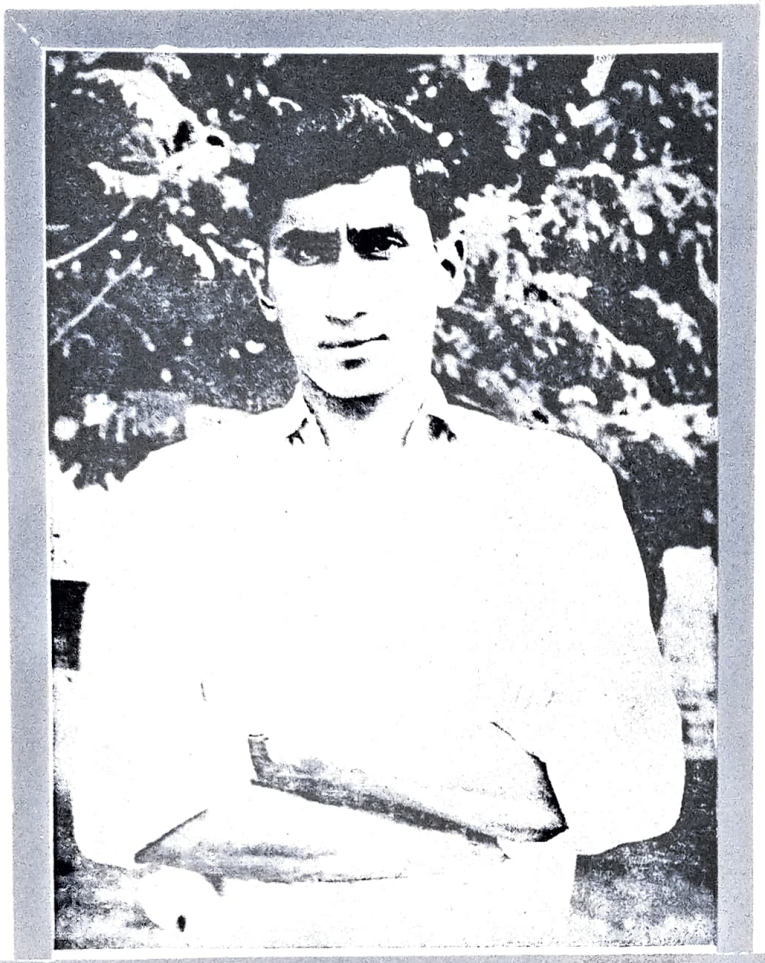
fade away. To my mind there is but one form of beauty, and that the highest, which is absolute, non-controversial, and sublime. It is the beauty of the life and mind of a person – a mystical admixture of mental, moral, and spiritual beauty. Thus, we arrive at two forms of beauty – beauty within, and beauty without. Each of them is of pleasing quality. Some have been blessed with both of these: Swami Vivekananda and Tagore were such men. Mahatma Gandhi had spiritual beauty in the highest form.

Thus the idea of beauty can be extended in several directions. It is but natural that we desire things that please us, or seem beautiful to us. Nature herself seems to come up with the most beautiful objects in her domain. Every man, including the hermit, desires to acquire beauty, either physical or spiritual or of any mode that pleases him. The very words *desire* and *admire* imply a beauty that has been desired or admired. According to modern thinking, the cult of Naturalism is not acceptable.

What then is art? From the sense of beauty arises the sense of art. It is an imitation of beauty experienced. The idea of art began with the make-up of the human body. Therefore art is a product of physical beauty – which is controversial. Art is the expression of feeling in a form that seems beautiful From historical evidence, the first external medium of art was perhaps pottery. When the potter applied coloured designs to the surface of the pot he had shaped, he was creating the art of painting. But pottery and painting themselves indicate that there was another art which began perhaps before them – the art of the folk-dance. Man began to sing and to dance perhaps before he had learned to talk. Primitive man took great pleasure in rhythm. Indeed, no art so pleased primitive man as the dance. He developed and varied it into different forms. All tribal festivals were celebrated with folk-dance or individual dances. From the dance came the idea of music which appears to have been devised out of the desire or man to accentuate the rhythm of the dance with sound and thus to intensify with rhythmic notes the excitement necessary for the central idea of the dance. Early man danced and sang not only to express himself but to offer expressions of his higher feelings to his gods and to Nature. Primitive man in this respect was more artistic than modern man. It was the so-called savage who gave us a more sublime base of beauty for the dance and the drama.

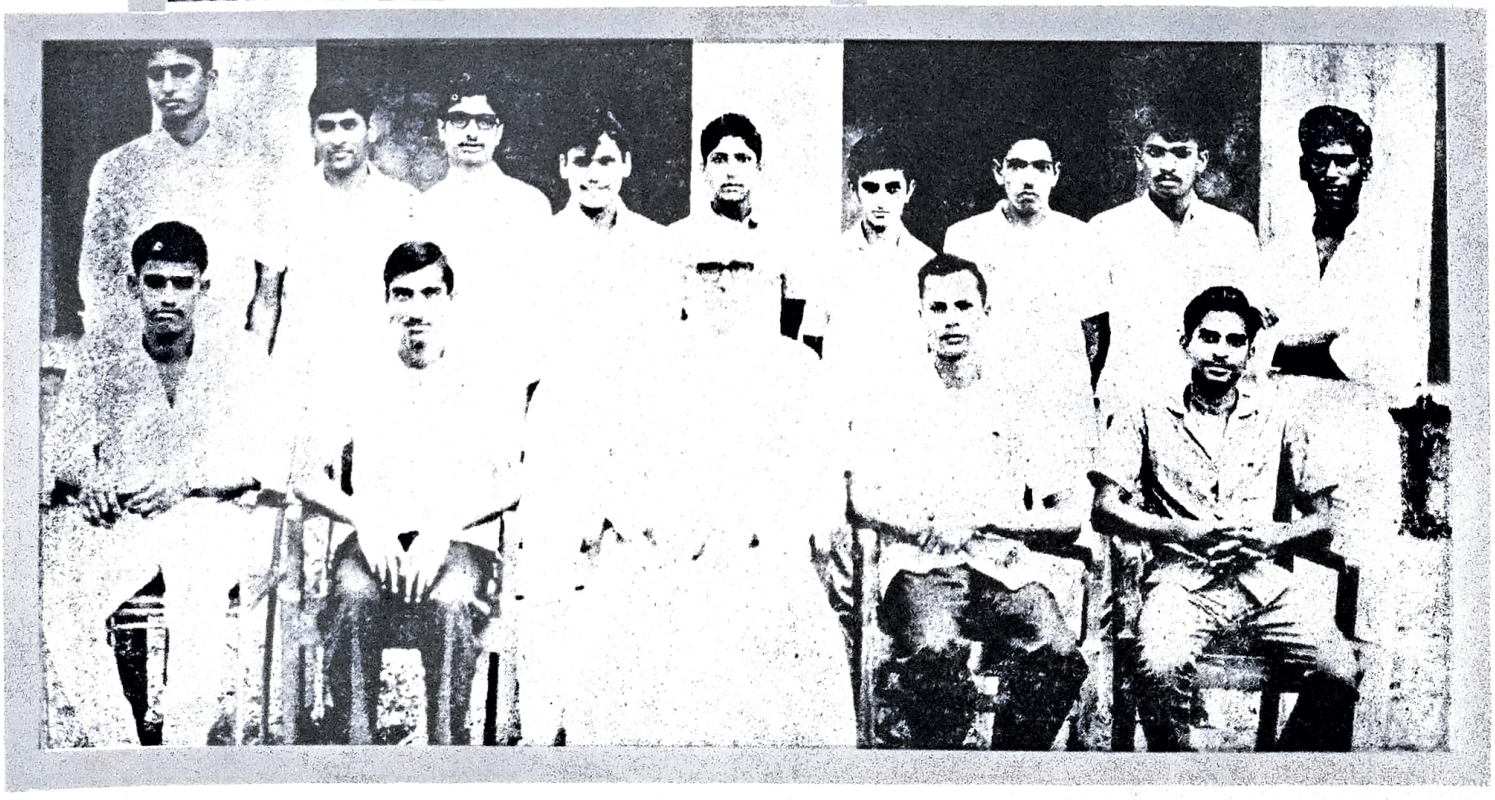
Symmetry is static rhythm pleasing us with the ordered proportions of male and female, plants and animals. Rhythm, symmetry and colour are the three cardinal points around which the meaning of beauty and art revolve. From these three arise the noblest arts of life — music, literature and philosophy. According to Indian culture there are four-and-sixty forms of art. All these modes of art are the ordered forms given to the chaos of ideas and feelings, and hence these forms are beautiful. We may conclude that the idea of art involves beauty, and hence there is an indispensable relation between them.

Captain of the Year



G. CHINNA SINGAIAH

College General Captain,
Cricket Captain,
University Cricket Captain,
Played for the State.



The Winning Cricket Team he captained

The image that fired the imagination of the world; And now – a shattered dream.

In Memoriam

M. S. SASTRY, III B. Sc., M. P. C.

The sad death of this fine young man occurred on January 5, 1969, in a tragic motor accident.

He had been a good and serious student, well-liked both by his companions and by his teachers. He was sociable and cheerful, most obliging and serviceable. This year he took part in two of the Cultural Week dramas, and you may see him in the photographs of the two plays, "Siromani" and "Noota Padaharu", as the lady in each.

God rest his soul.

R. I. P.

The Krishna Pushkaram at Vijayawada

P. SUNDARA RAO, P. U. C.

India is a country which abunds in sacred places, hallowed shrines and holy rivers. Every Hindu cherishes in his heart the desire to make a pilgrimage to the sacred centres of pilgrimage, bathe in the holy rivers and pay his homage to the gods enshrined there.

The Krishna Pushkaram is one of the largest attended festivals in Andhra Pradesh, ranking second only to the Godavari Pushkaram. The festival which comes off once in twelve years is an event of great significance and no devout Hindu can afford to miss this opportunity of taking a holy dip in the sacred river at Vijayawada.

The sprawling city of Vijayawada lies on the northern bank of the sacred river Krishna, picturesquely surrounded by hills of the softer, schistose variety. This ancient historical city has flourished since the sixth century A. D. and was once the capital of the Vishnu-Kundins. Early in the seventh century, the Chalukyas who reigned at Kalyani in the Nizam's Dominions invaded the place, then under the rule of the Pallava dynasty, and established a separate province there. The Chalukya dynastry flourished till it in turn was conquered by the kings of the Kakateeya dynasty in the twelfth century. After 1228 A. D. the city fell into the hands of the Mohammedans who established their capital at Kondapalli, a hill fortress near Vijayawada. The fortress was seized in 1515 by Krishna Deva Rayulu of Vijayanagar and handed over to the king of Orissa. Finally it passed into the hands of the British in 1766. Several pitched battles were fought here on the banks of the Krishna.

The legend of the Pushkaram goes back to very ancient times. Devendra, having been cursed by sage Gowtama for committing a sin, approached Brahma, the Creator, with the request to favour him with the most sacred *theertham* where one could wash off any amount of sin by a mere bath. Taking pity on Devendra, Brahma created a deep tank in the river Ganges, poured the sacred waters from his holy vessel into it and called it *Pushkara.* Devendra got rid of all his sins and became pure once again, after bathing in it for three days. Since then, the Pushkara became famous and was called the *Theertharaj* by Brahma. Later, Devaguru Brihaspathi, having satisfied Brahma with his great penance, obtained the Pushkara as a boon. The Pushkara, however, refused to leave Brahma and follow Devaguru Brihaspathi. At last it ended in a compromise – that the Pushkara should be with Devaguru for twelve days in the beginning and twelve days in the end of his (Jupiter's) year, and for one hour at noon during the rest of the year.

Devaguru's stay in the twelve Rasis (the signs of the Zodiac, such as Mesha, Vrishabha.....) represents the Pushkaram Festival for each of the twelve sacred rivers of India. Mesha is for Ganga, Vrishabha for Narmada, Mithuna for Saraswathi, Karkataka for Yamuna, Simha for Godavari, Kanya for Krishna, Tula for Cauvery, Vrischika for Tamraparni, Dhanus for Sindhu, Makara for Tungabhadra, Kumbha for Bhimarathi, Meena for Praneeta. The popular belief is that a bath in the holy river during this period absolves all sins, and that if certain religious rites are performed, the deceased ancestors will bless their progeny with all success in life.

There are several interesting legends extant which explain the origin of the river Krishna, and the derivation of its name, *Krishna*. One such is that Brahma wanted to perform Yagna on the Sahyadri or Western Ghats. As his first wife Saraswathi could not turn up in time for the Muhurtham, Brahma was advised by Siva, Vishnu and the other gods present on the occasion to perform the Yagna with his second wife Gayathri. He did so. Saraswathi on her arrival learnt of what had happened and was enraged. She turned all the gods present, including the Trinity, into rivers. Vishnu became the river Krishna, Siva the river Veni, Brahma the river Kakudmathi, and the Trinity flowed together from the Western Ghats. The other devas and rishis were also turned into rivers and all these strems joined the river Krishna.

Situated on the Indrakila hill in Vijayawada, overlooking the river Krishna is the Kanaka Durga Temple dedicated to Parvathi. This is one of the oldest Temples of the city, mention of which is made in the Padma Purana. In the story narrated by Agasthya to Sri Rama while he was in exile, it is mentioned that one Deva Sarma, the fourth son of Yagnasarma of Kalyanapuram in Avanthi Desa, visited several sacred places, and after visiting Srikakulam he came to Vijayawada and had the darshan of Kanakadurga.

There is a legend regarding the origin of her name. At the request of the Devas, the goddess Parameswari killed some demons. Her body had the glitter and shine of gold, and that was why in the days of yore this town was called *Kanakapuri*. The devas called the goddess Kanaka Durga, and she remained on this mountain at their request. Lord Siva joined her later in the shape of Jyotirlinga.

There are several other temples around Vijayawada which are visited on pilgrimage conjointly with the Pushkaram. There is the Malleswaraswamy Temple also situated on the Indrakila Mountain, the spacious Bhramaramba-Malleswara Temple elegantly perched at the foot of Indrakiladri, and the Kotha Gullu Temple.

This year's Krishna Pushkaram, lasting from October 12 to 26, was prepared for in a big way since pilgrims from all over India were expected to flock to Vijayawada for the occasion. The authorities had expected more than twelve lakhs of pilgrims and had made all the arrangements necessary for their accommodation in the town. Transport, food, shelter and sanitation were got ready for large numbers. Below the Prakasam barrage the bathing ghats had been roped off into enclosures and special rescue squads posted at all points of danger. Public address systems were mounted at several key points. And then the weather turned nasty. The first week of October was rainy and windy, and photographs in the newspapers showed six-foot white-caps in the lake above the barrage. There was

a brief outbreak of cholera for which the health authorities were well prepared, and they coped with it in time. As the last straw, there came the epidemic of Asiatic Flu — HK2-68 as it was dubbed. The pilgrims stayed away in their hundreds of thousands, and wisely too. The weather during the Pushkaram was a misery of cloud and drizzle compounded with the Flu The number of pilgrims who attended the Pushkaram was rather less than four lakhs, and they did not linger over their ritual bath or for visiting all the temples around the town.

The main attractions in town at the time of the Pushkaram were the Krishna Pushkaram Industrial, Agricultural and Cultural Exhibition on the PWD grounds, the Bharat Circus, and aeroplane trips from Gannavaram airport. Two Dakotas had been brought down for the purpose and they flew all day long for three weeks over the town. One flew its passengers two rounds over the town at ten rupees a head, and the other took them further afield for twenty-five. The Bharat Circus stayed in town for three weeks too, and its two shows a day played to packed houses. The Exhibition had many items of interest to the people, and most of the ground was used for stalls which did a brisk trade for a full month. Perhaps these extra attractions made up in some small way for the dismal weather during this year's Krishna Pushkaram.

HE WHO KNOWS

He who knows not, and knows not that he knows not, is a fool, shun him :

He who knows not, and knows that he knows not, is a child, teach him.

He who knows, and knows not that he knows, is asleep, wake him.

He who knows, and knows that he knows, is wise, follow him.

— *Persian Proverb.*

Zoological Tour to Pamban

B. MADUSUDAN RAO, II B. Sc.
K. M. VISWANATHAN, II B. Sc.
V. SURENDRANATH, II B. Sc.

On September 15, we II Year Zoology students went to Pamban. There were forty-three of us accompanied by three of our lecturers, Messrs. Koteswara Rao, E. S. R. K. Prasad, and Suresh Babu, together with our attender Bullaiah. This tour was to be educational, and sightseeing is a part of education today. It was a new adventure for us. The Howrah Mail took us to Madras not too comfortably; then from Egmore we caught the Rameswaram Passenger which left Madras by 11·30 a. m. and here we travelled comfortably. Till Villipuram the electric engine took us rapidly, and at Villipuram we got our steam engine. We had a peaceful night's rest and made up for sleep lost the previous night. Next morning we woke up as we were nearing Pamban. We breakfasted at Mandapam, then crossed a bit of the Bay of Bengal to Pamban which is at the other end of the sea bridge. It was wonderful to see the sea under the bridge. The central span of this bridge can be lifted up for ships to pass underneath and lowered for trains to cross over.

Pamban is situated on Rameswaram Island in the Ramanathapuram District of Madras; the island is about thirty-four square miles in area. It is connected to the mainland by the railway bridge alone now; on the mainland end of the bridge is Mandapam, and on the island side is Pamban. The island is in the shape of Vishnu's conch; it is almost all sand with lots of coconut, tamarind and odai trees all over. Little cultivation is done, as tradition has it that Sita moulded the Sivalingam from the sand of Pamban, and so the soil may not be turned by the plough. Pamban is a very small village; the inhabitants are mostly fisher folk and the atmosphere is that of *Chemmeen* to perfection. Here, we were all of one thousand and five hundred Kilometres away from Vijayawada. We stayed at the Marine Biological Service Home, all built of palm leaves on the sandy shore.

After tea each of us was provided with bottles, forceps, nets, and the rest, and bidden to start collecting specimens to justify our trip. Well, we went in the direction of the Bridge and collected: the Coelenterates Zoanthus and sea fans; the Annelids Polynoe and Aphrodite; tubicolous Polychaetes and heteroneries, Chitons of Mollusca, brittle stars of Echinodermata and some of the amphipods, giant crabs and hermit crabs of Arthropoda; and some gastropod shells. At 5·30 we came ashore; the evening sun was setting in a crimson sky and it kept us spellbound for a while. Then suddenly we decided to have a game of Kabbadi, the

two teams captained by two of the lecturers while the third umpired the game. After an hour of that we went home to our lodge, had supper, and planned the next day's programme, and so to bed.

Next morning after early breakfast we visited Krusadai and Pulivasala Islands; and this time we made a detailed study of many marine genera, collecting as many specimens as we could. We made the immediate acquaintance of the Molluscs Sepia (cuttle fish), Solen and Loligo, sea cucumbers which were plentiful, sea-urchins and sea-lilies, the Coelenterates Porpita, Vellala and Obelia (jellyfish). We spotted some giant jellyfish and rays coming ashore. We observed the habitation of the worm-like Balanoglossus or Hemichordata which burrows in the sand of the sea-bottom; and we collected only a few of them as the species is fast becoming extinct there. We had chosen this morning because it was then low tide, and we were able to get many more specimens than the previous day. We must have walked more than twelve miles in the hot sand under a hot sun and with no water to drink. We returned at two in the afternoon, quite tired. That evening we had a return match of Kabbadi. After supper Mr. E. S. R. K. Prasad entertained us with conjuring tricks, after which we had a little sing-song and then went to bed.

All through this trip our lecturers lived entirely with us and shared our life fully under thatch. The food was not what we would get at the best hotels, but it was good and wholesome. We did have some difficulty with the language, Tamil, but in vital matters we had recourse to two of our companions who knew the tongue.

On September 19, we visited Rameswaram, about twelve miles away. There we went to the seashore at Narikodi and made a bumper collection of sponges and corals. After lunch at Rameswaram we shopped in the market and bought shell-work and straw hats which are cheap there. At 4 p. m. the Ramanathaswamy Temple opened to visitors and we went in. From outside the temple is not imposing at all; but inside you are impressed with its dimensions The Nandi in the temple is a monolith seventeen feet high, twenty-two long and twelve feet broad. This temple is known for its third corridor 2,100 feet long. The corridors together are four thousand feet long, their width ranging from twenty to thirty feet of free floor space and a height of about thirty feet. The pillars are all carved in elaborate design. We returned to Pamban in the evening.

The next day we went to nearby Shingle Island to collect specimens. The island abounds in shells, but in hardly anything else. Shells are a fascinating hobby, and the beautiful ones fetch high prices. We gathered many mollusc shells – Haliotis, Trochus, Strombus, Tapes, Pierocera, Cypraea, Oliva, Murex and Xancus. We also found a good specimen of Pleurobrachiae. The day had begun cloudy and the sea was rough, now it began to rain as well. We spent the noon looking round the Aquarium and Museum of the Central Marine Fisheries Research Institute at Mandapam. In the Aquarium our attention was drawn by living coral, some giant marine turtles and magnificent sea-cows; there were of course all kinds of fishes, even sharks, and eels. Back at Pamban that night we decided to move on, and at two the next morning we thanked our kind host for his hospitality and caught the Madurai Passenger.

Madurai kept us for a day in which we saw all the historical and awe-inspiring

sights which could easily have been spread over three or four days – Mariamman Teppakulam, Tirumalai Naick's Palace, the Gandhi Museum, and the famous Meenakshi temple with all its wonders. And then Madras was almost overwhelming with the number and variety of its sights : the Zoo, the Museum, the Marina. To these we added the Odeon theatre where we saw the latest James Bond movie, *Thunder-ball*. Two days of education in the city, and we caught the Circars Express which returned us safe and sound to good old Vijayawada, with time enough left over to have some real restful holidays at home.

What had we accomplished in the tour? Well, we had certainly seen a good bit of our country we had not known before. Then, it helped us to establish more vital contact with one another, with the staff, and with Zoology.

THE CHOICE OF A GREAT MIND

When I was publicly solicited to write a reply to the Defence of the royal cause, when I had to contend with the pressure of sickness, and with the apprehension of soon losing the sight of my remaining eye, and when my medical attendants clearly announced that, if I did engage in the work, it would be irreparably lost, their premonitions caused no hesitation and inspired no dismay. I would not have listened to the voice even of Aesculapius himself from the shrine of Epidaurus, in preference to the suggestions of the heavenly monitor within my breast ; my resolution was unshaken, though the alternative was either the loss of my sight or the desertion of my duty.

— *Milton, "Defensio Secunda".*

Modern Art

K. KESAVA RAO, III B. Sc. (CBZ)

Every day a vast panorama passes before our eyes. Life with all its mystery unfolds before our gaze in a multitude of people, places, and things. Many of these register on our consciousness and the mind acknowledges its recognition of them in one way or another. But by far the greater number of objects in the panorama pass unnoticed because they have evoked no recognition. They have filled in the space and time between the objects recognized, but our recollection of them is virtually a blank. This recognitional blank is not necessarily caused by our ignorance of the object seen; it is produced most often by our unfamiliarity with the aspect which the object (perhaps familiar to us) has presented to us when we saw it, hence we could not recognize it. We lacked the imagination to relate a new perspective of the object with our old conception of it. For one reason or another the object has been abstracted from our range of recognition and now seems to us entirely new. This phenomenon is hardly new, seeing that the philosopher Augustine of Hippo spoke of the "beauty from ancient times which is ever renewed; too late have I come to know you, late have I loved you."

Each artist has his own point of view, his own perspective of things, and he concentrates his attention on a certain perspective of life which influences his works. He first visualizes in imagination an object which appeals to his mind, then he sees it from the perspective which characteristically represents his views and thoughts. Then it takes shape on the canvas. This painting will at first sight appear altogether unfamiliar to the layman; his first glance fails to recognize the object because he does not see the perspective from which it has been painted. In his opinion it is a mad combination of colours, true neither to nature nor to life. This kind of *abstract* art is the main staple of *Modern Art.*

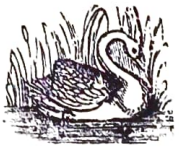
It is interesting to inquire into the idea behind this *abstract art.* The present-day artist claims that in nature there are innumerable objects, and that if an artist reproduces faithfully the shape of any one of these things on his canvas it is tantamount to an imitation of nature. The art of photography, especially colour photography, has made such imitation entirely superfluous. But modern art clearly should reveal the intensity of the modern artist's imagination which singles out that particular quality or phase of his object by which he is more fascinated, and which he gives predominance over any other natural beauty it might have. This kind of rebellious thought has, to some extent, a bearing on the present century's way of life, where divergence from the orthodox and traditional way has come to be the

accepted thing. This is an attempt of the individual, faced with the utter conformity of the modern mechanical and electronic civilization, to assert his own identity and to make his achievement human. This is taking place at an amazing pace, and man is continuously aspiring to conquer space and new planets.

As in everything else, in the artistic world also changes have come, and the new artists profess the idea of evolving a unique art of painting and sculpture. Modern music, for instance, takes the listener to fathomless ecstasies merely by its rhythm and tune. So also this kind of pictorial art professes to keep the viewer spell-bound without revealing any thing about its nature or its bearing with the outer world.

Although the father of modern art is Pablo Picasso, the original master-mind behind this art is Vasily Kandisky. Kandisky was Russian by birth, but he made his abode in Western Europe. The genesis of abstraction was this way. One fine evening, after his usual stroll, Kandisky returned to his studio and found a painting lying on his desk. He was so enthralled by its visual beauty that he could not at once believe that it was his own handiwork. After some careful observation he realized that the piece of art wus placed at a peculiar angle, and it acquired such grace only because of its misplaced position. The incident provoked Kandisky to evolve a new and special type of art, which was in his opinion more fascinating than creating exact replicas of nature.

The most striking feature of modern art is its combination of colours. This splashing of various colours on canvas was first experimented with as early as 1912 by an eminent artist, Robert Delop. Another great modern artist, Michel Super, comments thus, "Beyond all doubt, for the first time in the history of art, colour is displayed for its own sake; it sings for the sake of singing and vibrates for the sake of vibrating, without the slightest naturalistic context." But modern art can be fully appreciated only when an inexplicable relation is created between the maker and the viewer of the work.



THE VALUE OF A GOOD BOOK

As good almost kill a man as kill a good book: who kills a man kills a reasonable creature, God's image; but he who destroys a good book, kills reason itself, kills the image of God, as it were, in the eye. Many a man lives a burden to the earth; but a good book is the precious life-blood of a master-spirit, embalmed and treasured up on purpose to a life beyond life.

— *Milton, "Areopagatica".*

The Perennial Problem

C. MAHESH, I B. A.

We are all aware of the food problem facing not only the under-developed countries but also some of the developed countries of the world today. The food problem is the burning topic of the day. Food is so important for it provides the base for our social structure and especially for our economic activity. A nation, like an army, marches on its stomach, and if our stomachs are not properly fed, human progress is retarded. If democracy is to be preserved, it is necessary to provide adequate food for all the people in the country, for the very kernel of democracy is the welfare of its people.

Most of our farmers still lack the zeal to produce more and live better. Even if they have the desire, it is not backed up by a strong will. The great gap between the people's thinking and their doing should be bridged.

The food supply in India is inadequate in both quantity and quality, which paves the way for under-nutrition and mal-nutrition. Under-nutrition is the insufficiency of the quantity of the diet, which, continued for a period of time, will result in physical debility. Mal-nutrition means the lack of sufficient proteins, essential minerals, and vitamins, which, continued for a period of time, will lead to the lack of resistance, and cause a variety of diseases.

The food problem in India goes as far back as 1880. The Famine Commission set up that year after the famine of 1877 estimated the production of food in India at 52 million tons, and the demand at 47 million tons. But the Commission warned that the rate of growth of population was more than the rate of increase in food production. In 1945, another Famine Commission made it clear that thirty percent of the Indian population did not get enough food to eat. Because of the foster-care taken by the British, there was a tragic famine in Bengal in 1943 which claimed the lives of one and a half million people. After Independence, the first Five Year Plan gave a boost to food production. Even in the third Five Year Plan, top priority was given to agriculture. Inspite of all this, we had to gradually increase our imports of food-stuffs from foreign countries. In 1949, we had to import 2·4 million tons of food grains, in 1950 it was 3·5 million tons, and in the year 1951-52 we spent 126·42 crores of Rupees to pay for the food-stuffs we imported. In 1959, we requested the U. S. Government to extend the P. L. 480 for another five years, under which we could import sixteen million tons of food. In 1964, we again requested Uncle Sam to extend the same agreement till 1970.

The causes for our failure to achieve self-sufficiency in food are fairly obvious. First of all, the increase in demand for food is caused by the rapid rate of growth of our population which is at the alarming

rate of more than thirteen million per year. Another important cause is the low agricultural output, largely due to the practice of ancient agricultural methods, lack of irrigation facilities, lack of capital for mechanization, pest control, seeds and so on. Then there is a considerable lack of drillers, tractors, threshers and other modern agricultural implements. Where these machines are used, spare parts are not easily available, and so the machinery cannot be repaired. There is a lack of trained personnel skilled in the use and repair of modern machinery. Another factor is the rise in the price of foodstuffs. Because of the rise in agricultural prices, farmers are better off today and so they consume a lot more than they could have afforded before. This aggravates the demand for food considerably. Yet another factor is the poor distribution of available food. In the years of plenty an artificial shortage is created in order to increase the prices of foodstuffs. This gives great scope for black-marketeering, and the poor always suffer most from this evil.

Though the picture is dark, it is heartening to see that this problem will not plague us for very long. The Five Year Plans have made a lot of irrigation facilities available even to small farmers in many areas. The various irrigation projects, major, minor, and medium, have enabled farmers in some areas to reap two and even three crops a year. Much land that was desert and fallow has been reclaimed and brought under cultivation. A system of balanced and complementary use of the land has been evolved under which the land produces most and deteriorates least. Chief among these have been the use of green manure and fertilizers. Good seeds and new techniques from the Philippines and Japan have enable farmers to make the best use of their land.

But the problem of fair distribution has still to be adequately overcome. An increase of food production is of no use to the poor consumer unless it is equitably distributed. The danger of hoarding and profiteering should be rooted out.

By 1970 India will perhaps be self-sufficient in food for the first time since the East India Company upset the equilibrium of Indian society. The problem is not over with sufficient food production. 1968 gave us a bumper harvest of wheat in the Punjab ; yet in Bihar and Bengal there were near famines. There were no facilities for storing the crop in the Punjab and very few for transporting it to Bihar and Bengal. And apart from this, we should be able to store up a buffer-stock against natural calamities and lean years. The problem of drought might be licked by drilling wells and using pumps ; but what are we to do when floods destroy our crops ?

Tackling the food problem involves confronting the imponderable forces of inanimate nature and the predictable vagaries of human nature. Overcoming these will help Indian democracy to mature. This will be largely the fruit of international co-operation on a vast scale, of the bountiful assistance of other countries which have been concerned over the magnitude of our task. Indian democracy will come of age when India in her turn helps other backward nations to be self-sufficient and thus returns the kindness we have received.

Feast of St. Ignatius Loyola
Rev. Fr. Rector introduces the
Chief Speaker
SRI M. VENKATESWARA RAO, M. A.

"Admission"

"MUDU ROJULU SELAVU"

Photos :
Rev. Fr. R. Rajaiah, S. J.

Inter Collegiate Quiz

Dr. Burghall Umpiring

Why

what happened happened.

. . . ninety percent water . . .

. . . but, oh boy!

The other ten . .

The Modern College Student

T. PREMLAL, II B. Com.

It is often said that the youth of today are the leaders of tomorrow. Therefore these future leaders have to be well-trained and prepared to undertake responsibilities. Education offers a means to take up this challenge and affords a proper training.

The most formative period of one's life is spent in a college, where one graduates and in the process one is supposed to develop into a full-fledged citizen. In the college the student learns several things, which stand him in good stead throughout his life, and these form the foundation on which he often has to fall back when there is none to guide him.

A quarter of a century ago the youth of our country were quite different from what they are today. They were rather studious, well-behaved, respectful of elders, rules and regulations. Yet they never hesitated to join the national movement. Then their criterion of success was to be able to eke out a decent living and become civil servants. Distractions were few. Co-education was not in vogue; so the fair sex did not pose any problem at all. The nett result was that the young man of yester year accepted society as he found it, and was in his turn accepted by society.

Today things are quite different. There is a great rush for collegiate education. Some students come to it serious-minded, others not knowing what else to do, and yet others because they enjoy scholarships. The opportunities provided are many and everyone wants an education. Naturally, there is over-crowding in colleges, which poses problems both of discipline and of the quality of attention each student receives. To complicate matters still further, girls are also given equal opportunities in almost all fields of education.

Thus several problems arise, and the greatest one that confronts teachers and educational authorities is the so-called *modern college student*. What are his aims and ideals? How does he achieve them? Does he fit into society and rise to the occasion when necessary?

Perhaps the modern college student does not have the same foundation on which to base his studies as the student of a generation ago. Whatever the reason, the modern college student finds it difficult to adjust to the methods followed by his college teachers. He has therefore to discipline himself to it. But how can he achieve this when there are distractions all around him? He is tempted to abstain from classes, either to attend a cinema, or for a cup of coffee, or for a chat across the table. He is not to be blamed entirely, for there is not much to attract him in class. The standard of teaching has certainly deteriorated. Most teachers are unable to hold the attention of their

students. Their teaching techniques are out of date and the syllabus is dull, deadly dull. For the most part, they do the dignified job of a jail superintendent, but they fail to train minds. Further, the average college teacher is interested chiefly in his salary. The result is that the boys are enthusiastic, and lose no opportunity, to get away from classes. So, the modern student attends college sporadically, and shows his face in class but now and then.

In institutions where co-education is permitted, the authorities face a variety of complex problems created by the "butterflies". In the full bloom of their adolescence, still not mature, they are thrown together. Often many turn up with love marriages, or with threats of committing suicide, thus leaving their parents on the horns of a dilemma. But it is not their fault ; the age is such ! Thus the modern college student spends most of his time in "ragging" and teasing the girls and loiters in the corridors of the colleges.

By evening he finds he has not even listened to a couple of lectures, and yet he throws his books aside and goes out for a stroll in the bazaar or to a picture house. By the time he returns, he is tired and falls asleep. This pattern is repeated almost every day. Apart from this, the student unions conduct meetings often, and presence there is a thing of prestige, and participation a great achievement. All the less time for study.

So he hardly finds any time for studies, and as exams approach he tries to cram things in using tea and cigarettes to help in the process. And so he leaves the portals of the college with a very shaky grasp of knowledge and very little education. What is it that he has learnt and achieved ? Did he actually discipline himself to hard personal work ? Can he be a leader with this background ? The extent of the disaster is seen in the frequency of strikes ; strikes because the examination papers are stiff, for any reason, or for none at all.

If these are the future leaders, one has to wonder how the safety of our country can be entrusted to them, and what standard of ethics can be maintained. Of course, the modern student is not alone responsible for this state of affairs. At an early age he finds himself in an environment where to achieve anything he has to fight hard against the current, and his previous experience has not prepared him for the struggle. Often enough he is just a victim of circumstances. Perhaps the teachers are also a little to blame. Whatever it be, that is the actual result : the young men of today rebel against authority and are not able to find their place in society.

Obviously, there is something wrong with our pattern of education. It is up to the great educationalists of our country to review the system, recast it, and strike an acceptable balance. Then, I am sure, our colleges will be capable of turning out the best of men, free from many of the present defects, responsible and well-behaved, prepared to promote the progress of the nation in the future.

A Look at American Education

N. J. R. SASTRY, I B. Com.

In India today there is a deep dissatisfaction with the whole of our education, from primary school to university college. Many Indian students who can afford it go abroad for further studies, and the vast majority of these go to the United States. On their return after studies, they speak in glowing terms of the educational system of America and the educational facilities they enjoyed there. One remarkable point is that they all found courses of study to meet both their abilities and their ambitions, and they could take almost any course they wished. The quality of the finished product, too, is good and in very great demand in India. Let us take a casual look at the American system of education.

Americans take great pride in their schools, and they want all their children to have the best education possible. Only two percent of the American population cannot read or write, compared to twenty percent a century ago. There are more than fifty–four million students enrolled in schools and universities. New methods of instruction are being developed in the schools and children are encouraged to develop their creative abilities. There is greater emphasis on science, mathematics, and foreign languages, and an effort is being made to broaden the student's knowledge of other people and cultures. Television and motion pictures are widely used in teaching. More effort is being made to guide young people into careers suited to their natural talents and abilities. This is in keeping with the American belief that every child should have the opportunity to develop along whatever path he chooses.

Free public schools supported by taxes were established in the early days of the nation, with each State responsible for organising its own education system. Most States require that children go to school until they are of a certain age, which varies from sixteen to eighteen years. Educational requirements vary and are set by the State legislatures, with the management of schools by the local communities. Community school-boards – there are about thirty-two thousand – are free to establish educational programmes that exceed the basic requirements set by State law, and they usually do.

Today, almost half of the young people who graduate from secondary schools go on to colleges or universities. In the United States, the term *college* refers to an institution requiring a secondary school certificate for admission. It is often used in place of the word *university*. A college may or may not form part of a university. The University of California with its branch (affiliated) colleges alone has almost one hundred thousand students.

The cost of an education is substantial in private colleges and universities, but is much less in those supported by States and cities. Almost fifty percent of the students in higher institutions work to help pay their expenses. Scholarships are given to many deserving students. Some cover almost the entire expenses of attending college.

The National Defence Education Act provides Federal funds to help the States build more schools. It also promotes education in science, mathematics and modern foreign languages, and provides loans to college and university students. More than five hundred thousand have been aided by loans under the Act, some of which need not be repaid under certain conditions.

In 1965, a new education bill, the Elementary and Secondary Education Act was passed by the U. S. Congress. It authorised the spending of 1·3 billion dollars, with much of the money designed to help children who had been educationally deprived. Aid was extended, for the first time to both public and private schools, including parochial schools.

In most states Negroes and white students attend the same school. A ruling by the Supreme Court in 1954 ordered an end to a system of separate schools which had been maintained in seventeen of the States. Gradually all the States are carrying out the Court's order. Of the 5,400,000 students in colleges and universities, nearly 300,000 are Negroes.

In general, almost twice as many men as women attend American colleges. Women earn fully one third of all college degrees – bachelor's, master's, and higher. Each year about 420,000 students receive their first college degree, some 85,000 get their Master's degree and nearly 12,000 get their Doctor's degree.

Every year between thirty–five and forty million adults take adult education courses in everything from engineering to writing poetry. They may be housewives, business men, clerks, mechanics, or labourers. Many courses in adult education are given at night classes in public schools, town halls and community centres.

One or two points are rather striking about this system of education. First, it is something vital; modern science, foreign languages, and career counselling make it both relevant and personal; even adults are accommodated in the system. For another thing, it is very flexible and the widest variety is offerred at every level. By contrast, the Indian system of education is out of date and very rigid.

STUDENTS AND POWER POLITICS

Power politics should be unknown to the student world. Immediately they dabble in that class of work, they cease to be students and will, therefore, fail to serve the country in its crisis.

— *Mahatma Gandhi.*

Advanced Leadership Course at Neyyar Dam

Under Officer G. V. B. K. MURTHY, II B. Sc.

The N. C. C. is fairly ubiquitous throughout India, and it is by this time taken very much for granted. It is supposed to prepare youth for careers in the country's defence services; and one means of acquainting youth with the Services is to bring them together in annual camps. For the most part these annual camps, held usually in summer in various military centres all over India, are rather stereotyped, and once you have been in one of them you know them all. The Neyyardam camp was in this respect something out of the ordinary. Cadets from five states attended this camp, and from Loyola College those selected to attend were T. Umamaheswara Rao, M. N. V. Prasad Roy and myself.

The aims of the Advanced Leadership course sound ambitious: to develop qualities of leadership among the selected cadets; to impart training on military subjects; to develop a spirit of adventure, mental alertness and initiative through long treks and patrols; to train cadets to lead a platoon.

The course lasted for twenty-seven days from April 22 to May 19. 105 cadets from Madras, Kerala, Andhra, and Karnataka participated in the camp. At Trivandrum Central on April 21, we were received by an instructor, Havildar Naina, and we were transported by trucks to Neyyardam, nearly twenty-two miles away.

On reaching the training-camp site we were welcomed by the camp Commandant, Lt. Col. M. T. George. The Camp personnel were three officers, six Junior Commissioned Officers, ten Personnel Instructor Staff and the 105 of us cadets. The first two days were spent in settling down and in other administrative arrangements. And then we began in right earnest.

Camp life started at five in the morning with Physical Training. All the cadets went out for road work, running, and physical training. To and fro we did about ten miles of walking and running, up to Kattakada. Then we had an hour off for breakfast and for getting ourselves ready again for the training. This lasted usually till 1 p. m. and consisted mainly of practicals in Weapon Training, Field Training, Civil Defence, Map-reading, Fire-fighting, Field Signals. Lunch was at 1 p. m. and supper at 7 p. m., served separately for Vegetarians and non-Vegetarians. The afternoons were devoted either to demonstrations of warfare or lectures, after which the evening tea was served and the cadets had their games and bath. At sunset, the Roll Call Parade brought all the cadets together. Supper was followed by entertainments, and then we did a bit of spit-and-polish on our kit. Lights Out found everyone in bed. All the days in camp followed the framework of this routine.

In the course of the camp we went on a sight-seeing trip down to Cape Cormorin. We did the whole trip on bicycles, about 120 miles all told. Two days were taken for our journey to and fro, and we stayed there one day. At this southern-most tip of India, we were able to enjoy the sunrise in the Bay of Bengal and the sunset in the Arabian Sea; we also saw the Gandhi Smarak Mandir and the Swami Vivekananda Rock.

But most of our days were spent in short-trekking, long-trekking, and in rock-climbing. For the short treks we were issued rain-coats and Field Service Marching Order equipment. For long treks we had to carry our rations and we also had to cook our own food in the forest. In short-trekking we did forty-five miles of walking up to Arugani and Kunighimala. We also climbed the Agastya Kudam Peak 6,132 feet above sea level. There is nothing like trekking for developing stamina.

The main subject of the Advanced Leadership course, and the most ardous, was Rock-climbing. We were shown how to tackle natural rocks and artificial rocks. We used various holds to climb rocks. We were shown six types of holds of which I recall only the pinch holds, pull holds and pressure holds. We were shown the use of ropes in climbing, and we learnt to use them ourselves. We used knots of all kinds, but those prescribed and the most efficient to keep us from falling were end-man's knot, the middle knot, the thumb knot, and the bow line. Then we learnt the delicate art of rappelling or sliding down a doubled rope, and the three kinds of rappellings, stomach, side, and shoulder. Then, with the use of slings, we learnt how to rappel long distances down vertical faces easily and quickly. The types of slings we used were the long, the short, and the cum-shoulder. Rock-climbing is nothing but team-work. But rock-climbing and mountaineering are excellent for developing initiative and imaginative leadership.

The camp was, on the whole, rather interesting. It enabled us to gain some insight into the untapped resourses within us, both physical and psychological. It was too short to effect any lasting change in our lives; but it did give us a good idea of the life of our regular army, and a keen appreciation of the hardships and the heroism of our Jawans.

HOW GENIUS PRODUCED A MASTERPIECE

Perceiving that some trifles which I had in memory, composed at under twenty or thereabout, met with acceptance above what was looked for, I began thus far to assent both to them and divers of my friends here at home, and not less to an inward prompting which now grew daily upon me, that by labonr and intent study (which I take to be my portion in this life) joined with the strong propensity of nature, I might perhaps leave something so written to after-times, as they should not willingly let it die.

Ananda Coomaraswamy -
Exponent of Art, Literature, and Philosophy

V. N. RAO, III B. Sc.

Very few have heard of the name of Ananda Coomaraswamy. But he is still remembered by lovers of art, literature and philosophy.

Dr. Ananda K. Coomaraswamy was born on August 22, 1877. His Ceylonese father, Sir Muthu Coomaraswamy Mudaliar, a barrister, was the first Asian to be knighted. He was also a member of the Legislative Council. Elizabeth Clay Beely, an English-woman, was Ananda's mother. Thus the idealism of the East and the pragmatism of the West were blended in his make-up.

His education was completely Western. He was a Doctor in natural science. Besides, he was an accomplished linguist, well-versed in English, French, German. Latin, Greek, Sanskrit, Pali and Hindi. He was also conversant with Spanish, Dutch, Persian, Tamil and Sinhalese.Dr. Coomaraswamy perceived the damage caused to Oriental culture by Western civilization. His belief cost him his career. He gave up his job and devoted himself to the study of Indian art, culture, literature and philosophy. His memorable work *Mediaeval Sinhalese Art* was produced with the cooperation of his first wife, Ethel Mary. His second wife Ratnadevi, worked on Indian songs.

Coomaraswamy saw a peculiar type of culture transforming the beautiful East into a colourless Eurasia. He travelled extensively in Europe and the Eastern countries. He gathered material for his works. In 1917, he was appointed a Research Fellow of Indian, Persian and Mohammedan Art at the Museum of Fine Arts, Boston. He later became the Curator of the section of Indian and Far Eastern Art, where he remained until he retired a month prior to his death on September 9, 1947.

Indian Art is associated with the Indian way of life. It is very difficult to comprehend the subtleties of Indian Art without a knowledge of its metaphysical and aesthetic background. Coomaraswamy laid stress on this point. The Boston Museum could acquire its collections of Eastern Art under his guidance only. These collections are regarded as the most important in the world. He succeeded in putting Indian Art in the first rank of the great arts of the world. To help its cultural revival, he interpreted the Indian civilization of old to modern Indian society.

He regarded Indian women as the best conservators of our culture. By Western academic standards Indian women were

perhaps uneducated, but they were not uncultured. He maintained that literacy did not mean education, and education was not culture.

On seeing the beauty of the world of ancient India in ancient monuments, decaying arts and crafts, Ananda Coomaraswamy felt an impulse to devote his life to their revival. He made critical studies of the various aspects of Indian Art which require an understanding of a high order. His contributions to the various aspects of Indian Art were monumental.

Dr. Coomaraswamy was an ardent supporter of the Swadeshi Movement. He put forth a plea for the revival of our ancient crafts and national education. He requested the people to give up the cheap imitation of western industrialism. He deplored that "a single generation of English has succeeded in breaking the threads of tradition and has created nondescript and superficial beings deprived of roots, belonging neither to the East nor the West, neither to the past nor to the future." He insisted on adherence to tradition. He gave importance to plain living and high thinking.

His enthusiasm and profound scholarship are revealed in his last work, *Why Exhibit Works of Art*. He showed the way to the younger generation to discriminate and to appreciate objects of art in their right spirit.

To the fourteenth edition of the *Encyclopedia Britannica* he contributed eight articles on Oriental Art. He also wrote for the *National Encyclopedia of America* on Eastern Art. He was asked to edit words of Indian origin for *Webster's New International Dictionary*. With the assistance of the late D. Gopala Krishnayya, he wrote *Mirror of Gestures*, his earliest work on Indian dancing.

Dr. Coomaraswamy was not a politician. Still his classic work of political thought is contained in *Temporal Authority and Spiritual Power in the Indian theory of Government*. In the last decade of his life, he entered the new field of Vedic metaphysics. *A New Approach to the Vedas*, and *Time and Eternity* are some of his contributions to that field. His works in all number about sixty.

Ananda Coomaraswamy was regarded as one of the greatest scholars of the world. The Indian Renaissance was expressed in him. By his death India and the East lost a true exponent of art, literature, culture and philosophy.

THE TRAGEDY OF LIFE

The song that I came to sing remains unsung to this day. I have spent my days in stringing and in unstringing my instrument. The time has not come true, the words have not been rightly set; only there is the agony of wishing in my heart.

— *Tagore, "Gitanjali"*

SOCIAL WORK

Fr. PRINCIPAL VISITS

to see ...

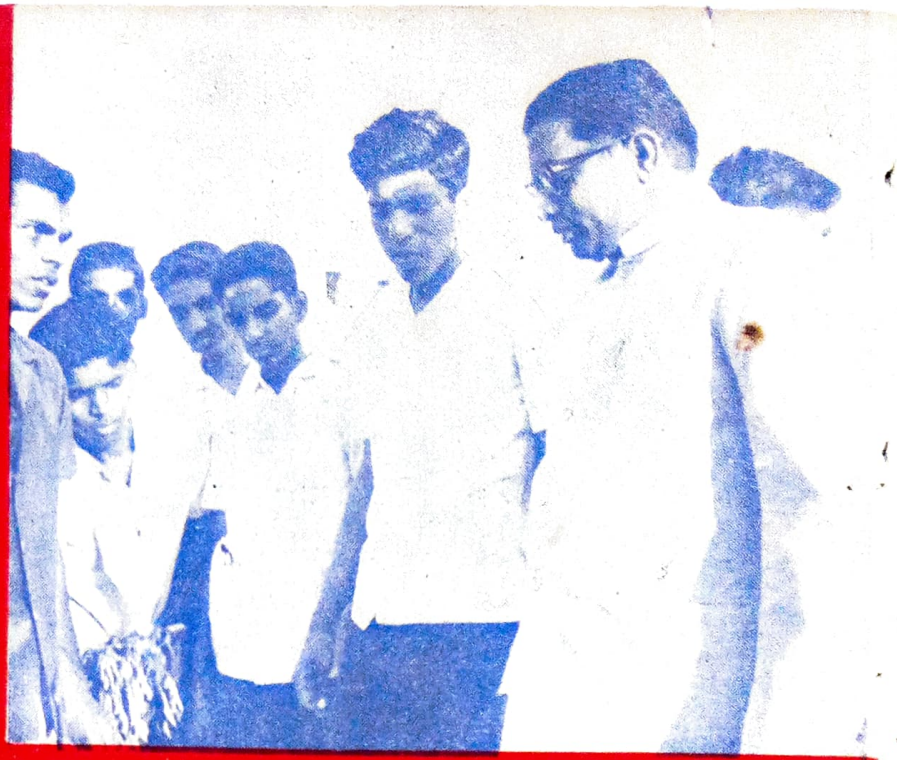
How its' done

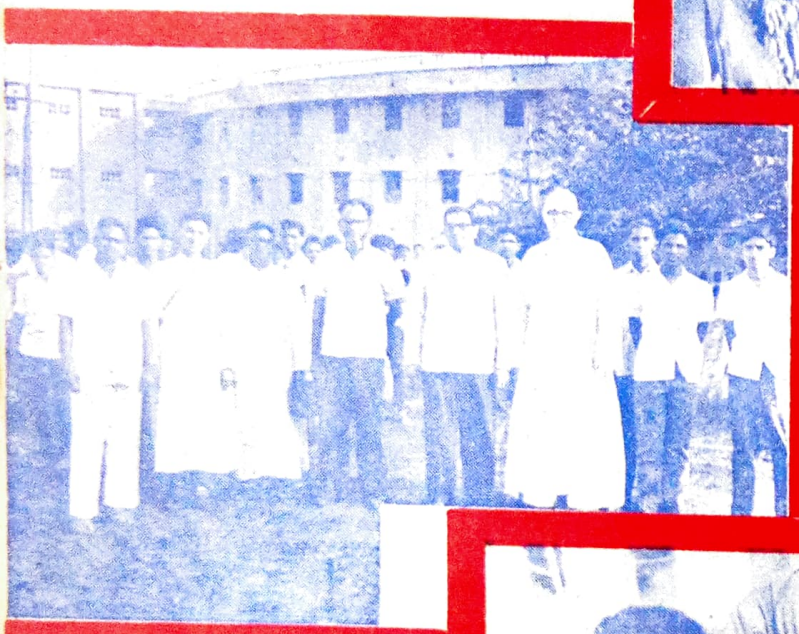
Sri M. Appala Naidu

District Agricultural Officer

[illegible]

investigates the phenomenon





Do it this way,

this way.

Cancer

PINNAMANENI NARASIMHA RAO, II B. Sc.

Cancer is one the most implacable foes of the human race. After numerous researches and experiments, it still remains obscure and leaves us in mystery. Its importance is shown by the fact that cancer together with heart diseases constitutes the foremost "killer" of mankind in the twentieth century. Even after the expenditure of millions of dollars on the cure of cancer in rich countries like the United States and Russia, cancer still remains an elusive problem.

Before going further, let me state what cancer is. The word *cancer* is essentially a layman's term, but yet it has its own specific meaning. Literally *cancer* means *crab* and it refers to *crab-like movement* Scientifically it is equivalent to the terms *Neoplasia* and *tumour*. *Neoplasia* means *new growth.* After being batted about by many scientists, the definition of *tumour* has taken the final shape given it by R. A. Willis : "It is an abnormal mass of tissue, the growth of which exceeds and is uncoordinated with that of the normal tissues and persists in the same excessive manner after cessation of the stimuli which evoked the change."

Scientifically speaking, the word *cancer* is too simple a term for this mysterious hazard, because this refers only to the crab-like movements with which the local infiltration of the overgrowing tissues into the surrounding tissues takes place. But, in addition to this local infiltration, one of the most fascinating properties of cancer is *metastasis*, which is the spread of the cancer from a source organ to distant organs of the body : for this is the main stumbling-block to the successful treatment of cancer. So, let us wait till an intellectual genius is able to find a more accurate and comprehensive name for this wonderful disease.

The term *cancer* comprises an abnormal growth, which does not subserve any useful physiological function, thrives on normal tissues for its nutrition, is capable of forming secondaries in the body, if untreated is ultimately fatal and destroys the life of the host. Thus described, cancer is a parasitic growth which can infest the whole body and ultimately kills its host.

What are the causes of cancer? Regarding the immunological causes, Hieger of the Royal Cancer Hospital, London, says, "First, the carcinogen acts on the labile lipo proteins of the cells about to become cancerous in such a way as to convert them to a kind of simplified *antigen* ; secondly, this antigen is not sufficiently energetic immunologically to bring about the formation of neutralizing antibodies, otherwise cancer cells would be destroyed as fast as they were created ; while the new antigens are marked in some

way, they confer sufficient energy specifically on the altered cells to make them behave abnormally, that is neoplastically."

The carcinogenic causes are either. *Exogenous* which speak of external agents causing a human cancer and may be irradiational, occasional occupational cancer, excessive cigarette smoking; or they are *Endogenous* causes which speak of internal agents causing cancer, like the sex hormones.

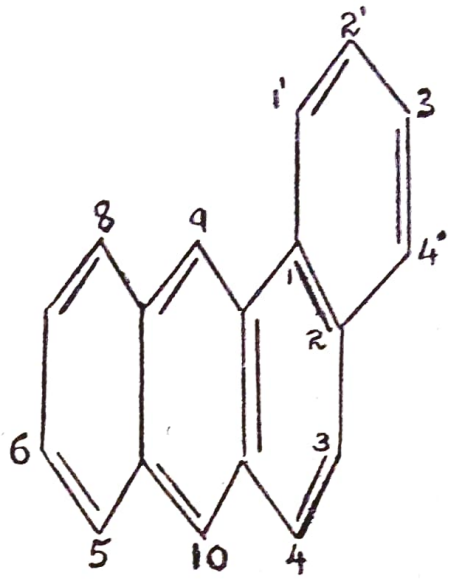
Here we might mention Berenbhum whose thesis is that carcinogenesis is a two-stage affair, initiation and promotion. So, initiating agents start the process by an instantaneous change in the cell or a somatic mutation, and promoting agents render the above condition irreversible and so the promotor action is attributed to agents such as hormones.

The carcinogens may be of the chemical group, or of the biological group (viruses, hormones), or of the physical group (ionising radiation, environment and occupation). As a student of biology and chemistry, my interest lies with the chemical and biological groups of carcinogens.

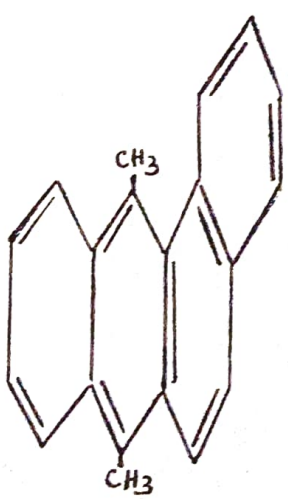
The chemical carcinogens are certatin hydrocarbons, azo-compounds, and aromatic amines.

The carcinogenic hydrocarbons are tar and mineral oils. Labourers who always worked with tar and oils were found to develop cancer of the skin. Later, cancer was produced experimentally in animals by prolonged application of these compounds. A previous application of oleic acid definitely increased the carcinogenic potency of tar, while lactic acid, lavolin and some other substances diminished it. Different sites of the body showed different degrees of susceptibility to the carcinogenic effect of tar and oils.

Pure carcinogenic hydrocarbon has been isolated in simple derivatives of 1 : 2 - Benzanthracene, which by itself is a feeble carcinogen, but in its derivatives which contain substitution groups at the positions 10, 5, 9 and 6, are more powerful carcinogenic agents.



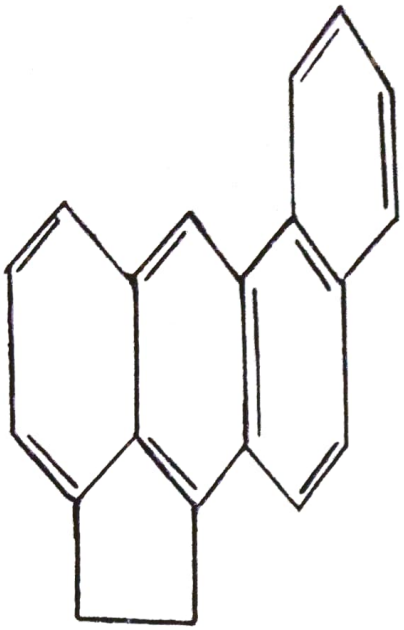
1:2 Benzanthracene
(Feeble carcinogenic)



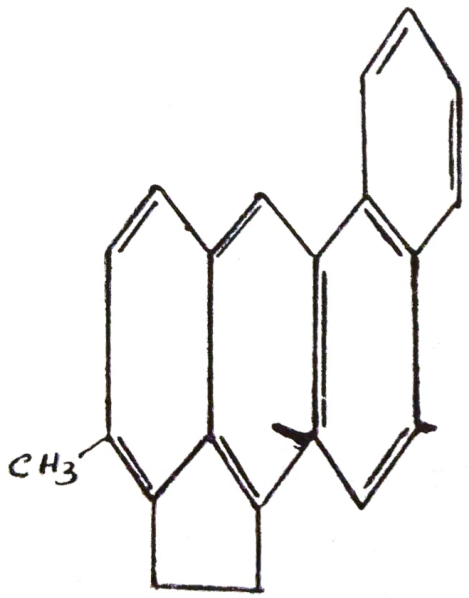
9:10 Dimethyl – 1:2 Benzanthracene
(Most active carcinogenic)

Carcinogenic hydrocarbon is also found in Methyl-cholanthrene and Cholanthrene which are intimately related to bile acids chemically. If we compare

them, once again they are derivatives of 1 : 2 – Benzanthracene with substituents in the carcinogenically favourable positons 10, 5, and 6. Methyl-cholanthrene, which is prepared from both deroxycholic acid and cholic acid, is particularly notable in having sutstituents in these three positions. These two compounds may produce bronchial cancer.

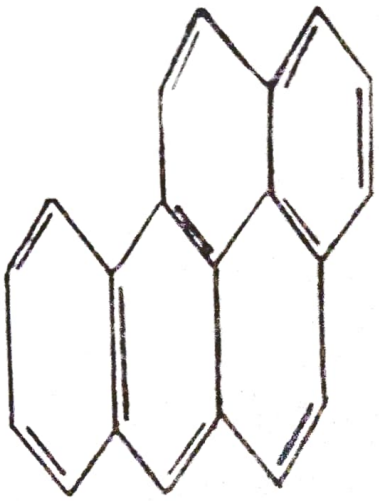


Cholanthrene
(Carcinogenic)



Methyl Cholanthrene
(Highly carcinogenic)

Another carcinogenic hydrocarbon' 3 : 4–Benzopyrene, is an important constituent of coal-tar, slightly inferior to Methyl–cholanthrene in its potency. Significant amounts of it are found in soot and carbon black, in processed rubber, smoked meat and fish. Its chemical structure is closely related to that of 1 : 2–Benzanthracene.



3:4 Benzopyrene

Yet another, 1 : 2 : 5 : 6–Dibenzanthracene, is the first pure hydrocarbon shown to be carcinogenic. In molecular structure it is also a derivative of 1 : 2 – Benzanthracene. It may produce cancer of the lung.

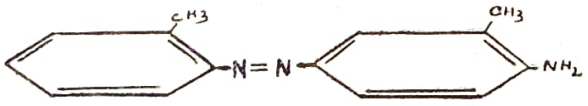
Other carcinogenic hydrocarbons and related compounds are

1 : 2 : 5 : 6 – Dibenzofluorene
1 : 2 : 5 : 6 – Dibenzacridine
1 : 2 : 5 : 6 – Dibenzocarbazole
3 : 4 : 5 : 6 – Dibenzacridine
3 : 4 : 5 : 6 – Dibenzocarbazole
3 : 4 – Benzophenanthrene
2 – Methyl 3 : 4 – Benzophenanthrene

In short, the carcinogenic hydrocarbons may produce cancer of the kidneys, the alimentary canal, the liver, the lungs, the genital system, the breast, the salivary glands and of the nervous system.

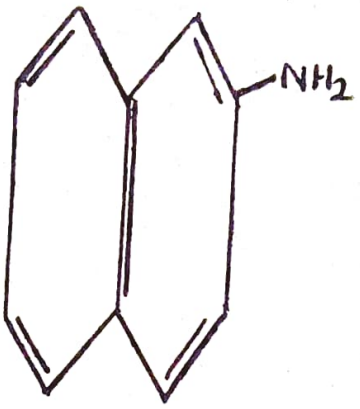
How do the carcinogenic hydrocarbons produce cancer? Cancer is a change in normal cell metabolism with a complex change of intracellular enzyme activity. The main intracellular substance that takes part is nucleic acid with its conjugated proteins, desoxyribosenucleic acid (DNA), and ribosenucleic acid (RNA). This acid of the cell nucleus shows a marked alteration in its normal pattern and action. Briefly, the carcinogenic hydrocarbons bring about histological changes and establish latent precancerous changes which later lead to cancer.

In the carcinogenic group of Azo-compounds which may produce cancer of the liver and proliferative changes of the skin is O-Aminoazotoluene, the parent substance from which carcinogenic Scarlet-red and Butter-yellow can be got. 2 : 2′ – Azonaphthalene, 2 : 2′ – Diamino – 1 : 1′ – Dinaphthyl, and 3 : 4 : 5 : 6 – Dibenzocarbazole also can produce cancer of the liver.



O- Amino azo toluene

The third group of chemical carcinogens is the Aromatic Amines. 2–Naphthylamine, which is related to aniline and often found in aniline products, can produce cancer of the urinary bladder after prolonged administration. So cancer of the urinary bladder is an occupational hazard of workers in the aniline dye industry.

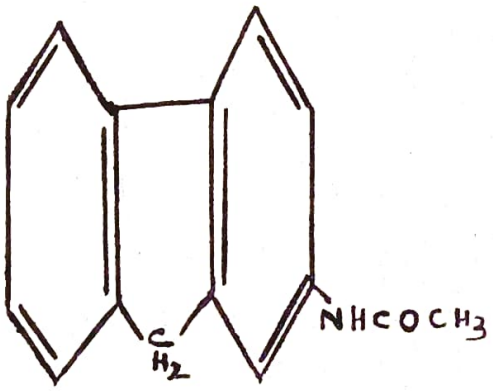


2 – Naphthyl amine

(2 - amino naphthalene)

2–Naphthylamine, its derivatives, other aromatic amines, and their derivatives, are all occupational hazards because they are highly carcinogenic.

Another Aromatic Amine is 2 – Acetyl-Aminofluorene which may produce tumours of different organs, particularly the bladder, renal pelvis, liver, pancreas and lungs.



2- Acetyl amino Fluorene

(Highly carcinogenic)

The constant local application of 2 – Anthramine (2 – Amino – Anthracene) has been found to cause cancer of the skin thus painted and tumours of the external auditory meatus.