INDIAN INSTITUTE OF TECHNOLOGY
MADRAS

Fifth Annual Number

Front Cover Page — Perspective View of Science & Humanities Buildings.

Back Cover Page — Perspective View of Metrology Laboratories Drawing by THE ENGINEERING UNIT.

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Fifth Annual Number

MAGAZINE PUBLICATION

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GERHARD FISCHER
(Consul for Germany)

February 15th, 1964
Madras.

As one associated with the founding and the phased development of IIT, I have great pleasure in sending a message to the annual edition of the institution magazine.

The crest of one of the prominent Universities in South India contains the noble thought – expressed as only Sanskrit can: "there is nothing comparable to or excelling knowledge". As a rider or corollary to this is another declaration made repeatedly by great men of this land, who were adding their voices to kindred souls in other parts of the world before them, that knowledge is not the exclusive birthright and property of any individual, a society or a nation but the common inheritance of all mankind.

India and Germany have, in my opinion, given tangible expression to these two thoughts in the establishment of this higher institute of learning in Madras, under a plan for co-operation and assistance, which stems from centuries old cultural ties between the two countries and is indicative of future endeavours also.

As the representative of the German Government in Madras I consider it to have been my privilege to have witnessed the gradual growth of this institution right from the blue-print stage some 4 years ago and to have played some part in this interesting and most useful development.

The future of the IIT is paramount in the minds of both statesmen and administrators in Germany – as evidenced by the recent visits. I can only say that if past records should be any indication, the future of the institution is indeed going to be bright and all those who are associated with the institution in one way or the other can look forward with confidence. The task that the IIT has before it is a shared task in which Germany will continue to show a whole-hearted desire to achieve accomplishment.

My term of office in Madras will soon come to a close and it is not but with a little sadness that I can bring myself to bid goodbye to persons and places around me. May I take this opportunity to say farewell to the members of the board of management, members of the teaching staff, administration personnel and the student community and to convey my sincere good wishes for the continued growth and success of the IIT.

GERHARD FISCHER

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* PRIZE WINNING CONTRIBUTION

Indian Institute of Technology

MADRAS-36.

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There is, as the saying goes, a time for everything. Stale as most platitudes are because of incessant usage, their invocation seems to be called for at the present moment. We will not indulge in anything more than a bit of flattering introspection, a generous distribution of congratulations and goodwill, and, of course, mutual patting of one another's backs.

☼ ☼ ☼

A sense of achievement is in the air. The teething troubles are over. The infant that was groping and stumbling has finally found its footing and has come of age. The final accomplishment of turning out a batch of Engineers had a sense of urgency about it, what with the speed of the accelerated course and the glittering goal beckoning. The first forward step has been taken, all misgivings mopped up, hesitation put to rest, and hereafter there is no looking back, not even in anger.

It is to be hoped that the students leaving us this year will bear our flag high wherever they go, not inspite of the difficulties they had to face while here, but because their's is the privilege of pioneers. They can also go with the assurance that their example, which was

indeed commendable, will be followed by those succeeding them. This assurance is necessary because their absence here will certainly create a vacuum in every sphere of activity, which has to be filled by their juniors. To borrow somewhat from Sir Wintson Churchwill never have so few students done so much to establish the name of their Institute.

We wish them all bright futures and would fondly hope to keep in touch with them for they are the pride of this Institute.

The response to our call for contributions, which was rather overwhelming, can be directly traced to the unusual importance of the occasion. What strikes one is the fact that a number of final year students have, at the hour of their maximum output of energy taken time to contribute articles, no doubt, under the stress of sentimental parting. While they have dealt with topics of a serious nature, perhaps to leave a strong impression after them, the juniors have been more down to earth in their attitudes as can be seen from the versification of the "Travails of the Tummy" by Madhusudan Menon.

This year's issue carries a portrait gallery of the outgoing students, a useful innovation which gives brief sketches of their careers as well as general information such as their addresses. This practice, we hope, will continue in the years to come though it will be a formidable job for the future editors. The Annual numbers will hereafter constitute a kind of family album which we can always pore over or frighten the guests with.

PEEP INTO A PROJECT

Prof. B. SENGUPTO,

Director,

Indian Institute of Technology, Madras.

Reprinted with the kind permission of Association of Principals of Technical Institutions Souvenir (1964)

I have great pleasure in contributing a brief biography of the Indian Institute of Technology, (Madras) Project to the fifth Annual Number of the Institute Magazine.

It was towards the end of the Second World War that it became apparent to the then Government that India could not, for ever, be dependent on foreign manufacturers or alien know-how for satisfying her essential requirements. It was, for the first time, realised that technological advancement and rapid industrialisation were the only "open sesame" to survival, let alone, national prosperity. Advanced countries like Britain, Germany, France and Japan, from whom India could expect immediate assistance in the above direction, were all lying prostrate after a protracted war. They were, certainly, not in a position to send out to India their scientists and technologists, for reconstruction, like charity, had to begin at home. The then Government of India realised at last that the crying need of the hour was for training technical personnel, especially at highter levels, with the utmost speed, to pilot the long-delayed industrial revolution in the country.

A High Power Committee was set up under the Chairmanship of the late Sri Nalini Ranjan Sarkar to go into the question. The Committee comprised 20 members drawn up from eminent scientists, technologists, industrialists, representatives of the various Government departments and the Armed Forces. The Committee was set the task of considering and reporting on the need for establishing a central institution, possibly on the model of the Massachusetts Institute of Technology (U. S. A.) with a number of Institutions affiliated thereto or a net-work of technical institutions on a regionol basis, with reference

to various allied matters relating to their scope and size, location, control and management, staff buildings, equipment etc. The Committee submitted its interim report early in 1946. Their main recommendations were that a higher technological institute should, each, be set up in the northern, western, southern and eastern regions of the country, the management of each Institute be entrusted to a small but representative Governing Body composed of persons with requisite back-ground, qualifications and experience, the Principals and Heads of Departments be appointed to ensure proper planning of buildings, equipment and courses of study and the services of an Architect with experience in the planning of technical institutes be procured at a sufficiently early stage.

The Government of India accepted the recommendations of the Sarkar Committee and established the first Indian Institute of Technology in the eastern region at Kharagpur. This Institutute took its first batch of students in 1951. The process of organisation of the Indian Institute of Technology Kharagpur brought to light a number of bottlenecks. There was dearth of staff with research and design experience. Research equipment was not available in India nór could it be manufactured locally without adequate experience in design and fabrication. Instrumentation was a serious problem as there were neither instruments nor trained personnel with requisite experience to handle them. The necessity for obtaining equipment from technologically advanced countries was, therefore, felt keenly. The Indian Institute of Technology, Kharagpur, was fortunate in obtaining the assistance of the United States of America, the United Kingdom and the Soviet Union in this direction. The services of a number of foreign experts were obtained for purposes of organising the research departments in the Institute. A considerable quantity of equipment was made available by these countries for post-graduate and research work. With such personnel and equipment forthcoming, the Indian Institute of Technology, Kharagpur has made considerable progress in the field of technology.

It was in this context that the Government of India came to the conclusion that the remaining institutes could best be set up in collaboration with the technologically advanced countries. The offer of such collaboration was not, long either, in coming. When our Prime Minister visited Germany in June 1956, their Government offered to set

up a Higher Technological Institute in India. The Prime Minister accepted this gracious offer and suggested to the German Government that a German Technical Mission could visit India, see different engineering colleges, research institutes and factories at work, get a clear view of the needs of our country, discuss the scheme with our educationists and the Government of India and then formulate final proposals.

The German Technical Mission under Dr. Ruker arrived in India in October 1956 and visited the national laboratories, important technical institutions and engineering colleges and industrial establishments in order to gain a first-hand knowledge of the conditions prevalent in India and the problems of a Higher Technological Institute. The Mission had also discussions with the Sponsoring Committee set up by the Government of India under the Chairmanship of Shri Y. N. Sukthankar, the then Cabinet Secretary, regarding various aspects of technical education, training etc. The Ruker Mission submitted its report to the West German Government on the 23rd of November 1956. The main recommendation were that (a) a higher technological institution be set up under the Second Five Year Plan with the collaboration of the Federal Republic of Germany, (b) the organisation of the institute should follow the example of the Indian Institute of Technology, Kharagpur (c) compulsory work-shop training to be imparted to the students (d) five engineering departments (civil, Mechanical, Electrical, Chemical and Metallurgical Engineering be set up along with the department of Science and Humanities. (c) the first two-years of the course be common and specialisation be confined to the last two years of the 5-year course with further specialisation being left to the post-graduate courses. (f) design be given the same importance as in German Technical Universities and (g) the closest possible relation be established with industry and other research establishments. Dr. Ruker's report went before the Sponsoring Committee in 1957.

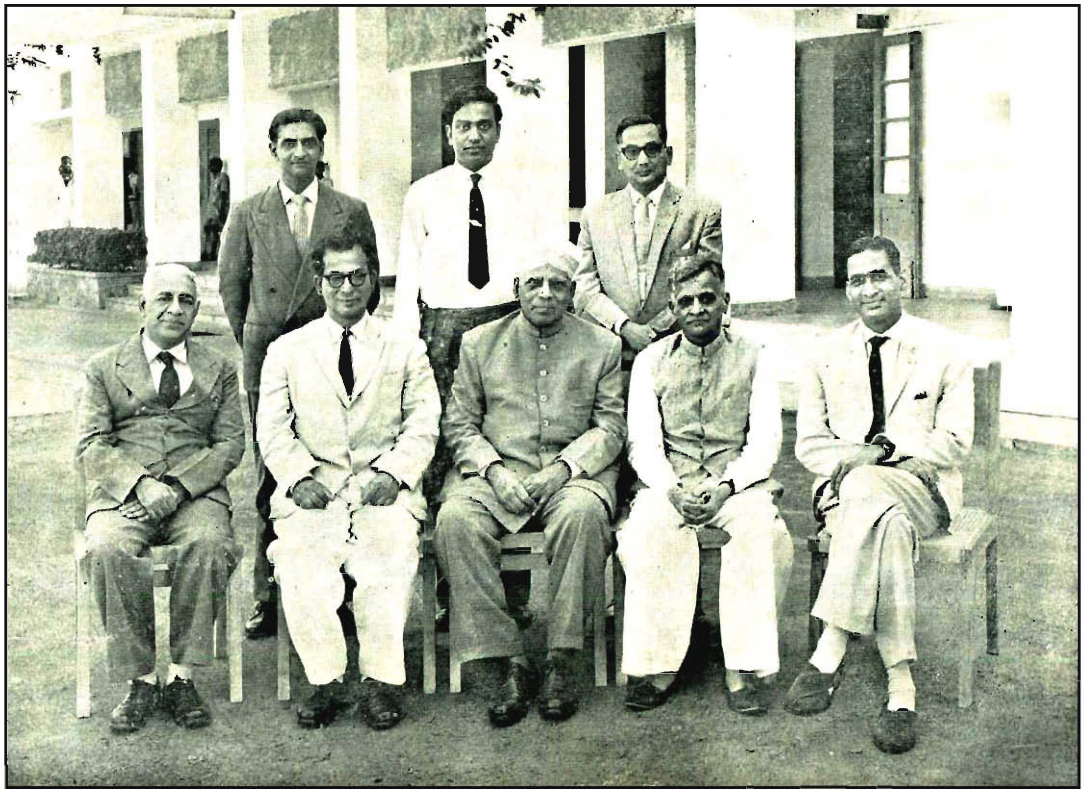
In the meantime the question of location of the Institute was engaging the attention of experts both Indian and German. Claims of various places, both of the North and the South, were examined and it was ultimately decided that the Institute should go to the South. The Governments of Madras, Mysore, the then Travancore and Cochin and Andhra Pradesh wanted the Indian Institute of Technology to be

set up in their respective states. The All India Council of Technical Education appointed a Committee consisting of Dr. A. L. Mudaliar, Dr. J. C Ghosh and Dr. P. L. Deshpande to report to the Co-ordinating Committee of the AICTE after ascertaining the views of the various state governments. The claims of a number of places such as Kuppam and Arkonam in Madras State, Lagir and Kudikodi in Mysore State, Sethuparvathipuram in the then Travancore-Cochin State, Anantapur and Hyderabad in Andhra Pradesh were considered by the Committee. The alternatives of starting the Indian Institute of Technology in the Engineering College at Madras or at the Madras Institute of Technology or at the Anantapur Engineering College or at Hyderabad under the aegis of the Osmania University or at the Indian Institute of Science, Bangalore were also gone into by the Committee. The matter was, finally, discussed at a meeting of the Southern Regional Committee of the AICTE on the 4th of May 1956, which was attended by the representatives of the State Governments concerned. The Committee, after due consideration of the various claims, unanimously recommeended that the Indian Institute of Technology should be located at Madras. This was accepted by the AICTE and the Government of India. It was also decided that the Institute should not be attached to any of the Universities but should be a separate entity.

The Government of Madras graciously offered a site within the Rajbhavan and a few villages nearabout for the location of the Indian Institute of Technology measuring about 633 acres of land consisting of lovely wooded land of about 300 acres, lakes and tanks of about 100 acres and dry land for the rest. The site was in close proximity to the Engineering College, the Highways Research Station, the A.C. College of Technology and the Central Leather Research Institute and offered an ideal location for a technical institute, not too near to the centre of the city to get cramped and distracted. The Indo-German Agreement for the establishment of the Indian Institute of Technology, Madras was signed on the 7th of August 1958, with provision for

(1) Twenty German Professors / Specialists, and five German Foremen for teaching / training;

(2) Supply of scientific and technical equipment costing about Rs. 180 lakhs,



THE BOARD OF GOVERNORS

BOARD OF GOVERNORS OF THE INDIAN INSTITUTE OF TECHNOLOGY, MADRAS

Sitting (From left) : Shri S. Rajaraman (Director of Technical Education, Kerala) Prof. B. Sengupto. (Director, I. I. T. Madras), Dr. A. Lakshmanaswami Mudaliar, (Chairman, Board of Governors), Shri Akbar Ali Khan (Member of Parliament, Hyderabad) and Dr. Y. Nayudamma, (Director, Central Leather Research Institute.)

Standing : Prof R. G. Narayanamurthi (Head of the Department of Mechanical Engineering, I.I.T. Madras), Shri R. Natarajan, I. A. S. (Registrar, I. I. T. Madras) and Dr. P. Venkata Rao (Head of the Department of Electrical Engineering, I.I.T. Madras)

(3) Facilities for the training of twenty Indian teachers in German Technical Universities.

The Government of India constituted a Planning Committee for the Institute under the Chairmanship of Dr. A. L. Mudaliar to prepare detailed plans and estimates, courses of study etc. The Planning Committee, at its first meeting, formulated the courses of studies to be started at the Indian Institute of Technology, Madras. The work of preparation of detailed plans was, however, left over to the Director to join.

In pursuance of the decision of the Government of India to start the Indian Institute of Technology from the academic year 1959, Shri L. S. Chandrakant, Deputy Educational Adviser to the Government of India was appointed Special Officer. The Institute was registered as a Society under the Societies Registration Act of 1860. (It has since been declared an Institution of National Importance under an Act of Parliament.) The stage was set for the inauguration of the Institute.

The 30th of July 1959 was a red-letter day in the history of the Institute, for it was on this day that the Indian Institute of Technology was inaugurated by Prof. Humayun Kabir, the then Union Minister for Scientific Research and Cultural Affairs, before a large and distinguished gathering. The Minister significantly stressed the fact that though the Indian Institute of Technology, Madras was the third higher technological institute to be started, it had the advantage of instituting, straightaway, the 5-Year integrated course leading to the degree of Bachelor of Technology, which was soon to become the pattern of engineering education in the country.

The infant institute was assured of help from all quarters. The Government of Madras came forward with every help. The Vice-Chancellor of the Madras University and the Director of the A. C. College of Technology placed at the disposal of the Institute space in the A. C. College for purposes of class-rooms, laboratories, drawing-classes, teachers' rooms and library. The Director of the Central Leather Research Institute made available 2 large rooms to house the administrative offices of the Institute. The Government of Madras placed at our disposal a hostel in Saidapet for accommodating the first batch of 120 students admitted in July 1959.

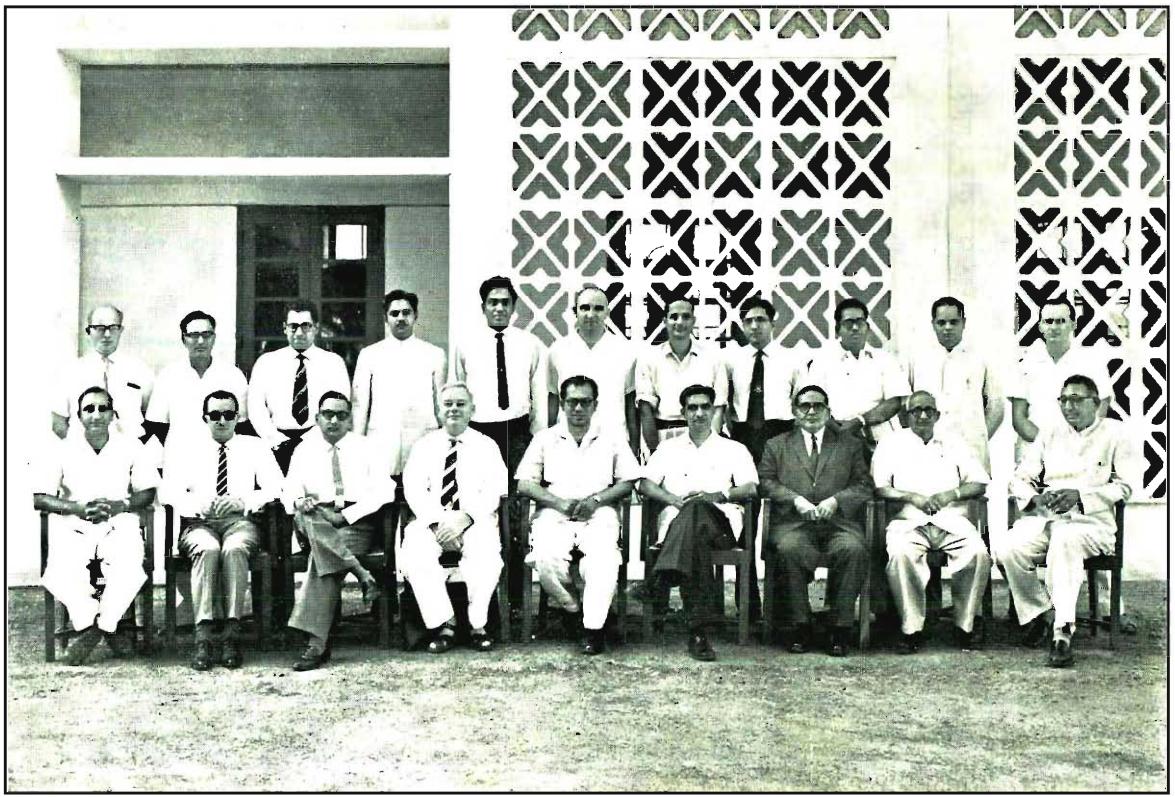
The Institute started work with four German Professors and one Foreman and the requisite Indian staff for conducting the first year of the course. The Government of Madras placed at the disposal of the Institute the services of Shri R. Natarajan, I. A. S. for appointment as Registrar. Prof. Sengupto the first Director of the Institute, took charge on the 17th of August 1959. The immediate task of the Director was to prepare a lay-out plan of the campus and report on the Project as a whole, outlining the details of the scheme with an estimate of expenditure for submission to the Government of India for sanction. Since the first batch of students were admitted in 1959, it was imperative that immediate steps were taken to have, by July 1960, hostel accommodation for 240 students, class-rooms, drawing office & workshops.

On the academic side, the Board of Governors took some important steps. It was decided to set up 10 departments :—

(1) Civil Engineering
(2) Mechanical Engineering
(3) Electrical Engineering
(4) Chemical Engineering
(5) Metallurgy
(6) Physics
(7) Chemistry
(8) Mathematics
(9) Applied Mechanics
&
(10) Humanities.

It was decided that 300 students be admitted per year to the 5 year degree courses leading to the degree of Bachelor of Technology in Civil, Electrical, Mechanical, Chemical and Metallurgical Engineering. Facilities were to be given for admitting 500 students, in due course, to the M. Sc., M. Tech., & Ph. D., degrees.

The Board set up an Engineering Unit at the Institute and Mr. M. S. Srouty, a Superintending Engineer of the Mysore P. W. D. was placed in charge. The services of Messrs. Prynne, Abbot and Davis and R. R. Sarma two of the leading Architects of Madras, were obtained for



THE SENATE

Sitting (Left to Right) : Dr. E. G. Ramachandran, Dr. K W. Haug, Dr. P. Venkata Rao, Prof W. Koch, Prof. B. Sengupto (Chairman) Prof. R. G. Narayanamurthi, Shri T. Balakrishna Nayar, Dr. I. R. Rao, Prof. M. V. C. Shastri.

Standing (Left to Right) : Dr. H. Heitland, Prof. R. K. Gupta, Dr. P. C. Varghese, Dr. C. Ramasastry, Shri R. Natarajan (Secretary), Dr G. Stahl, Dr. S. Ramseshan, Dr. S. R. Valluri, Dr. S. K. Srinivasan, Dr. D Venkateswarlu, Dr. S. Seinecke.

the Institute. The master plan of the Campus was got prepared by the School of Town and Country Planning, New Delhi. The Director submitted the Project Report late in 1960, after a visit to Germany.

The Project Report envisages a student-population of 2000. It will be fully residential as far as the students and the academic staff are concerned. The Institute will have about 8 lakh Sq. ft. area for instructional buildings, 10 hostels for students and 1 hostel for staff members and 1100 staff quarters. The township with an estimated, ultimate population of about 10,000 will be complete in all respects with its own schools, post-office, bank, marketing centre, services such as water, electricity, drainage and sanitation, roads and pathways, parks, internal transport system, internal communication and community centre. The estimated cost of the Project is about Rs. 9.38 crores.

The implementation of the first phase of Project, the Building Sciences block, the 7-Unit Workshop and two hostel blocks were completed in July 1961 and the Institute shifted to its own Campus. There was some set-back in the first phase of construction for want of steel and cement. Mr. Srouty, the Superintending Engineer retired from service. However, the services of Shri Y. S. Ramaswamy, a Superintending Engineer of the Central P. W. D. were obtained to see the Project through. The second phase of construction started. The number of students admitted at the Institute was also now showing an upward trend. While 120 students were taken in 1959, and 1960, 180 were admitted in 1961, 208 in 1962 and 300 in 1963. The only handicap was that post-graduate and research work could not be started as laboratories and buildings were not completed and specialised research equipment was yet to arrive from Germany. However, inspite of all difficulties, the Institute was able to construct by the end of 1962, 9 workshop type laboratories, about 60% of the Electrical Sciences block, 40% of the Mechanical Sciences block, 200 residential quarters, 4 hostels for students and one for staff, a market, a guest house, and lay 8 miles of roadway. An open air theatre designed after the Roman amphitheatre with a seating capacity of 6000 was also commissioned. It has a stage measuring 100′ X 50′, an underground dressing-room and a central area measuring 120′ X 80′ for group acting, folk dances, acrobatics, games like basket ball, volley ball, badminton and tennis. It has been provided with illumination for conducting these games at night and also for projection of films. The theatre was put to excellent use when His

Excellency Dr. H. Lubke, President of the Federal Republic of Germany visited us to lay the foundation stone of the Institute on the 3rd of December of 1962.

With the completion of about 200 quarters, the staff moved into the campus in January 1963. Thus community – campus life, which is one of the main objectives of the Institute, got going in 1963.

The Institute has its own water supply, electricity, drainage, and conservancy systems. A marketing centre, a post office, a branch of the State Bank of India, a primary school were also provided for. The Institute runs its own internal transport system with a small fleet of 3 buses. We have a Medical Officer and a small dispensary. According to our present programme, the entire construction of instructional buildings with the exception of the Administrative and Library blocks, will be completed by March 1964.

A major portion of the equipment has also arrived from Germany. Post-graduate courses have been started in Physics, and Engineering leading to the Master's Degree. Research work has also commenced. In the next couple of months, the institute would really be in full swing.

The sudden Chinese aggression on our northern border in 1962 posed a challenge to the Institute as it did to the whole of the country. The fourth and fifth year of the Five-Year integrated course were accelerated (shortened by six months) while a separate 3-Year degree course for the B. Sc. students was also inaugurated.

The I. I. T. Madras has made perceptible progress during the 4 years that have gone by since its inception. With hope, fortified by our conquest of all our teething troubles, we look forward to our Institute becoming a lode star in technology. A dear dream would, then, have come true.

Impact of Engineering on Society

K. Ramachandra

" This desire of knowledge, and the wonder which it hopes to satisfy are the driving power behind all the changes that we, with careless, question-begging inference, call progress. They and their reactions upon man's other wants and needs have, since history began, wholly altered the appearance of the dwelling place of man as well as man's relation to his dwelling place. "

—Nicholas Murray Butler in " Philosophy "

The birth of engineering took place long before the development of first recorded civilization. Its beginnings are hidden in those civilizations which were dust when the first recorded civilization came into being. Engineering is thus as old as civilization. The Engineer was born when man tried to become the master of his surroundings and when he tried to shape nature's gifts and forces to meet his needs and wants. Engineering has been a powerful and effective instrument in the evolution of civilization. It can be truly said that the rise of engineering and the progress of a nation have always gone together.

In the early civilizations, engineering was confined to public enterprises which were under government control. Thus we have the remarkable pyramids of Egypt, the acqueducts of a Roman empire and the beautiful buildings of Greece. Later when these civilizations vanished, the books of the past were temporarily lost to sight but the bridges, roads and architecture of those days remained as mute remainders, even in ruined form, of what had been and again could be. The words 'engine' and 'engineer' were unknown to the ancients. It was Tertullian. an early Father of the christian church who used the word 'ingenium' (meaning invention or production of genius) in A. D. 200 to describe a battering ram used by Romans in their attack on Carthage. It was another thousand years, however, before the man who devised and directed the operation of these engines was referred to as an 'ingeniater', the origin of the modern title, engineer.

The Renaissance period saw the freeing of science from the shackles of Religion. The early discoveries of modern science " involved turning

upside down the intellectual and moral assumptions which had guided man during long centuries and even millenia ". Copernicus, Galileo and Kepler were chiefly responsible for this. In 1492 Columbus had discovered a new world, while in 1519, Magellan had embarrassed the doubters by sailing around the world. But Science and Engineering continued to develop independently each in its own directions and interests. It was only in the ninteenth century that a developed science was wedded to a developed technology. However one has to go back to Renaissance period for the first steps which provided for this setting 'fraught with momentous consequences for the human race.'

The evolution of Engineering science in the mid-nineteenth century opened a new era for man. The practical art of Enginering was rationalised and 'reduced to a science'. One very important result of the 'reduction to a science' was that men of far less than outstanding engineering genius could play a useful part in the wide expansion of engineering activities. The field was no more limited to a few who possessed extraordinary gifts of genius.

After the evolution of engineering science, the rise of 'new' engineering was rapid and is still expanding to wider horizons. These widening activities of engineering have had a powerful role in the rise of modern civilization. It has been the dominant force in shaping the lives and interests of ever greater numbers of mankind. The identification of engineering with Industry, the dependence of our modern economy and means of producing the needs of life on engineering have been the major factors in bringing about the change in the status of engineering in human affairs.

The impact of this new engineering on society has been tremendous. The world has materially advanced far. Man has been able to tame Nature to his needs and wishes. Nature has been made to work for the material comforts of man to such an extent that our forefathers have to live in this age to believe all this. The ultimate aim of a civilization has always been, as Aristotle puts it, the search of a 'good' life for its society. Engineering has greatly helped this civilization in this search and succeeded to a great extent. The world has been shrunk to a small unit by the rapid advances of Technology. The miracles of the modern world have been expressed by Professor C. E. M. Joad thus:

"We can talk across continents and oceans, telegraph pictures, install television sets; in the home, listen in Delhi to the Big Ben striking in London.....Liners have swimming baths, crops are ripened by electricity, roads are made of rubber, X-rays are the windows through which we behold our insides, photographs speak and sing, murderers are tracked down by wireless, hair is waved by electric current, submarines go to North pole, aeroplanes to the South".

Yet with all these comforts, man is not happy in the modern world. Chaos reigns supreme in the world; tension, fear, and anxiety grip the man and the roads lead to blind alleys. The present world is leading to a crisis in our civilization. "The age of challenging perils, of tortures, tormentations, fever, chaos and agonies"—that is how one reads and analytically interprets our age and its critical temper. The progress of the world through the last few centuries has been truly static though it appears dynamic apparently.

Technology has to take the chief blame for all this. Technology by its rapid advance has given us material comforts undreamt of before but it did not prepare man for this advancement. The adjustment of man's thinking faculties to technological advances has been too slow. This unpreparedness has tripped society in its progress and hence the present crisis. Civilization has come to mean today a material advancement but it is not so. Civilization is not a pose of intellect but an attitude of life. All this is due to "technical" thinking which has taken the place of spiritual and moral thinking which gives security for any civilization.

Technology, some say, has created a Frankenstein which will destroy the human race. Even if this is true, we cannot turn back as it is impossible to cancel the advances made so far and also to suppress the desire of knowledge in man. This desire of knowledge has led to the changes which one calls progress. These changes have altered the habitat of man as well as his relation to his habitat.

Technology has been called the 'liberator' and also the 'enslaver' of man. One speaks of the blessing and at the same time the evil of technology. Technology, the brain-child of man has become the master of man instead of being his servant as intended to be. Many

necessities of modern society are not real necessities but artificial necessities created by technological advancement. The harmony between man and nature has been lost. Man feels a stranger in his own home. Many of the old crafts have disappeared due to technology. Whole sections of population have been morally ruined by "soulless" occupations. Personality is slowly withering and dying in this machine age. Mechanisation has mutilated humanness. Is this the nature of technology itself?

Before one examines the above question, some basic facts of technology need to be understood. The first curious fact about technology is its discontinuous nature. This surprising fact is made clearer by analogy to nature, particularly plant life. In the case of a plant, each stage of its life is a continuation of the past. This continuity is essential since a plant is a plant as long as it lives. Compare this with a machine. A machine is a machine only when it reaches its final stage of production. All the intermediate stages are subordinated in the cause of the final product. A plant does not strain towards its end: that would mean dying before its time. "It grows in harmony with its inward rhythm, each stage being a preparation for the next." In the case of technology, the success of today is only a starting point for tomorrow. If better things are discovered, older things become obsolete and useless Compare this with music; whoever heard of a Beethoven, Thyagaraja or Bach masterpiece becoming worthless owing to a newer master piece?. Technology can thus be seen to progress in short leaps and not continuously. Another curious fact about technology is that is static in growth. Thisastrounding fact is made clearer when one sees that technology only rearranges matter to render certain services which the latter would not have done if left to itself. The change is not permanent as nature becomes the same as before once the hand of technology is taken away from it.

The above facts reveal why technology is always in a hurry to attain its ends. Technology is material power and power involves temptations to its abuse. In its hurry, technology becomes indifferent to human values. Also it is not satisfied with the gains of the moment. It must hurry forward to newer and better things. In this relentless hurry, human relations are eliminated as far as possible. This effect can be particularly seen on economic thought and behaviour. But the technology serves economic ends above all else. The materialistic world

gives no scope for human associations. The simple joys of life which spring from kindness and love have no meaning in such a world. Such noble impulses wither under the calculating outlook of technology. The world becomes prosaic and boring.

This indifference of technology to human values poses a deadly peril. An outlook bent on exploitation of material resources in disregard to humanity is dangerous. The 'economic valuation of human beings has no link with human personality. A factual and scientific approach is all right when testing a material in physics or chemistry laboratory but the same technique when applied on human beings has no meaning. On the other hand it is dangerous. Reliance and open confidence should be the key methods of approach to fellow beings. Man cannot be tested as some material in a laboratory but should be treated as a person and human being.

"Civilizations are not held together by technology but by human association, which is cemented in belief and mutual trust." The sense of community is based on communal interests that take reliability and personality into account. A community which is not based on mutual trust and confidence is a mirage and as unstable as a house of cards. A technologically conditioned man has no purpose in the world since his belief in the ultimate and divine has been shaken by technology. The world to him is bereft of purpose. Such a world is filled with fear and dread of future. The security got by human relations is lost. His paths lead nowhere in this silent, hollow and friendless world. After all, ' man does not live by bread alone.'

The remedy to this sorrowful and dangerous state of affairs is simple. It is to return technology to its proper place in relation to man. Its proper place is functioning as man's servant; not as his master. This can be brought about only by man himself and not by technology. Humanness should return to man. This can be achieved only through faith in human progress and courageous solution of many perplexing problems of rapid technological change. As John Dewey says:

" Man is capable if he will but exercise the required courage; intelligence and effort of shaping his own fate. Physical conditions offer no insurmountable obstacle. The patient and experimental study of

nature, bearing fruit in inventions which control nature and subdue her forces to social use, is the method by which progress is made."

Technology has been a powerful force in shaping democratic principles, equalizing inequalities of environment and giving 'a good life' to man as never before. It has also made it clear that if the world has to progress further, and it should try to do it united. This unity of 'one world' is essential as otherwise the misdirected knowledge of modern world will undermine its own foundations causing disaster and ruin.

The future of engineering is tied up with the future of modern society. It will depend on our success to build up a harmonious and integrated front, at once dynamic and human, to go hand in hand with technological development. The modern society should not only learn from the past mistakes in the history of mankind, which led to downfall of many a great nation in the past, but should be keen to adopt to new perplexing situations of human relationship which technology is continually creating.

The Kennedy Effect

T. S. Ananthu

On the 25th of November, 1963, in the Southern part of the United States, a young man was watching President Kennedy's funeral on a Television set along with his family. During the proceedings, his father-in-law made some uncomplimentary remarks about the late President. The young man got so wild that he took a gun and shot his father-in-law. Of course, as usual, he then shot himself.

The above incident goes to show how the influence of President Kennedy had infiltrated into practically every family throughout the world. Of course, I admit this particular incident is an extreme case. But it cannot be denied that the assassination of the United States' First Citizen did cause turbulence, in varying degrees in the minds of millions and millions of people.

As the shock and horror of the murder is subsiding, it is now time we sit down coolly and calmly and examine why the death of one single man — that too, only 46 years old — produced such a lot of tumult all over the world. Why and how is it that people from all parts of the world, and with all shades of opinion, were wonder-struck by his personality, which everyman, friend and foe alike, described as striking and attractive ? In other words, what is this " Kennedy effect " ?

For purposes of analysis, it would be convenient to split up this Kennedy effect into three parts — the effect during his presidency, the impact of the assassination on the world, and the possible effects in the future. Let us analyse them one by one.

* * *

The effect of Kennedy's assumption of Presidency is of historic importance. This can be understood by examining the revolutionary changes brought about by Kennedy's taking over the reins of administration.

Let us not forget that U. S. policy was in quite a muddle particularly during the last days of Eisenhower's administration. The U-2 affair can well illustrate this fact. The State Department first denied that any such planes ever flew over Russia, then said that the plane shot down was a weather observation plane, and finally admitted that it had been sent for spying. To top it all, Eisenhower declared reconnaissance to be part of the national policy of the country. No wonder Khrushchov was having the better of the deal with him. The U. S. was as much (or as little !)inclined towards and ready for an arms reduction as Russia; but yet Khrushchov found means of making a dramatic gesture on the subject at the U. N. that impressed the entire world, while Ike seemed timid and reluctant. General Eisenhower received the greatest blow to his prestige when the Social Democrats of Japan forced him to cancel the projected tour of their country. Khrushchov's diplomacy seemed to be triumphing everywhere.

It was under these circumstances that John Kennedy ascended the Presidency. But still, within months he was able to demonstrate to the world that America was as strong, and yet at peace loving, as Rusia. But in doing so, he not only managed to mitigate deterioration in relations with the Soviet Union, but on the other hand improved these relations. Herein lies the pecularity and the greatness of the Kennedy effect. He got just what he wanted to be done. He wanted that the world should move towards peace, and the world did witness a sudden thaw in the cold war — signified by the signing of the Test Ban Treaty. On the other hand, Kennedy was determined that Communism should not make any headway, particularly in the Western hemisphere. And he managed to drive out Soviet nuclear bases from Cuba, not by chasing them away, but by making Khrushchov himself dismantle and withdraw the offensive weapons. But even after this episode, Khurshchov was as friendly as, if not more friendly than, before. The significance of this achievement can be gauged from the fact that the "Bay of Pigs" invasion of Cuba organized by the Eisenhower administrtiion (though carried out after Kennedy came to power) had proved a miserable failure. All this goes to show that Kennedy gave away nothing, but yet achieved everything.

The advent of President Kennedy had another important effect — the balance of personalities between him and Khrushchov. This balance

of personalities is an necessary as the balance of armed strength in order to achieve a balance of power and influence between the two great powers. Before 1960, Khrushchov was certainly more in the lime light than the American President (Eisenhower). His acts and speeches were given more importance and coverage even in the U. S. press. But Kennedy managed to attract as much attention as Khrushchov. This he did not by ignoring or condemning the Soviet leader, but by understanding him.

A few years ago, at a diplomatic party in Moscow, Premier Khrushchov told the assembled guests about the Russian who suddenly began to run through the corridors of the Kremlin shouting " Khrushchov is a fool ! Khrushchov is a fool ! " He was sentenced, the premier said, to twenty three years in prison — " three for insulting the party Secretary — and twenty for revealing a state secret ".

But Mr. Khrushchov is no fool—and Kennedy knew that the sooner the defendants of the " Free World " realized this fact, the better. The Soviet Premier is shrewd, he is tough, he is vigorous, well informed and confident. Americans traditionally like to picture hostile dictators as unstable and irrational men, the almost comic captives of their moods and manias. Some of them think of Khrushchov as a short tempered, vodka-drinking politician —buffoon, alternately scheming and screaming inside the Kremlin's walls. But Kennedy knew better. He knew that he was dealing with a tough-minded, articulate, hard-reasoning spokesman for a system in which be (Khrushchov) was thoroughly well, versed and in which he thoroughly believed. Khruschov was certainly not the prisoner of any ancient dogma.

Mr. Khrushchov, for his part, liked and respected Mr. Kennedy. He knew that Kennedy thought twice before he said anything, and would stick to what he said. He was confident that the American President would not and could not be threatened or overpersuaded into any foolish military manoeuvre by McCarthyists in the Pentagon.

The net effect of all this was that for once, the two greatest powers of the world moved towards one and the same goal— peaceful co-existence. The extremists were, for the first time, being condemned by both sides. China quarrelled with Russia. America refused to support colonialism. And both not only called for, but took steps in

the direction of peace and disarmament. A very notable achievement, indeed, considering the amount of mistrust and suspicion that they harboured against each other.

"Let us never negotiate out of fear. But let us never fear to negotiate," said Kennedy. But what is more important is, he put his words into action, and these actions have produced one of the most wonderful effects ever.

The effect of President Kennedy's assassination on the world was, to say the least, electrifying. I know of people who have no interest in current affairs, and never read newspapers, but who wept on hearing, and reading the news and details of his murder. For days, it was the lead news in all news papers throughout the world. Even "Pravada" remade its first page in order to be able to carry the news. It is said that apart from the Soviet space exploits, no news has received such a wide coverage as did Kennedy's death in the Soviet press, radio and Television.

The funeral of Kennedy was attended by the greatest assemblage of world leaders (many whose age was double that of the President !) ever to do homage to a nation's leader. They comprised over a hundred international dignitaries, including an Emperor, a King, a Queen, six Presidents, eight Princes and twelve Prime Ministers. Flags flew at half mast throughout the world (except of course, in China), and condolence meetings were held everywhere (including in the Indian Institute of Technology, Madras). Not even Dag Hammerskjoeld, the U. N. Secretary General who died in equally tragic circumstance in the Congo, was able to evoke so much emotion and sympathy.

What is unprecedented about all this is that these waves of shock and sympathy came from all corners of the world and from people who throughtout Kennedy's tenure in office had sharply disagreed with him. Take the case of General de Gaulle. He had opposed Kennedy's policies on not one but almost all occasions. But yet he had so much regard for the young President that he flew all the way from Paris and saluted his mortal remains.

And so the effect of the Dallas outrage was that the world realized with a nasty shock, that the man who had brought hopes of lasting peace was no more.

But the big question still remains—Are the hopes of lasting peace also no more ? Were these hopes also assassinated along with Kennedy? The answer to the question can be obtained only by predicting the effect of Kennedy in the future.

Kennedy's death has given opportunities to certain opportunists to try and exploit the situation. For example, President Ayub Khan is leaving no stone unturned in trying to make the new Administration lean towards Pakistan. Whether America will be able to successfully withstand the pressures exerted by people like Ayub will depend on the courage and firmness of President Johnson.

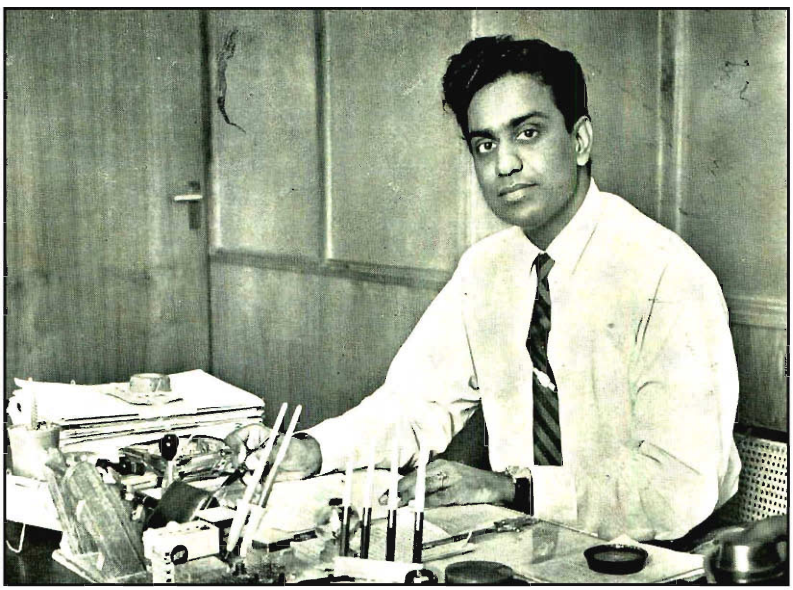
In his eagerly awaited address to the joint session of Congress, President Johnson said nothing new, but merely dedicated his administration to Kennedy's policies. He made no new promises, he formulated no new policies he had no new pledges. But yet, the entire world heaved a sigh of relief. The reason is that all sane and reasonable men throughout the world, to whatever class, caste, colour or ideology they may belong, appreciate, if not agree with, Kennedy's policies and action. Kennedy or no Kennedy, the effect of Kennedy must survive, if mankind is to survive. Therefore mankind now looks forward to Khrushchov, Johnson and other leaders of the world to make a reality of the great hopes of lasting peace, liberalism, equality, fraternity and co-existence that had been generated as a consequence of the effect — peshaps the greatest and biggest ever in the history of the world — of one single individual—John Fitzgerald Kennedy.

Human Rights

R. Natarajan, IAS

Man's fight for freedom and recognition of his right has throughout history, been a saga of the human soul. It has, indeed, been an epic of courage and resolution in the face of adversity. The flame of freedom could not be quenched by the Tyrants of the ancient Greek city—states or the Caesars of Imperial Rome. The absolute monarchs of the Middle Ages or the Pronouncements of the Pope could not put it out. The dictatorship—individual or democratic—of the modern days have tried hard to extinguish the eternal flame but have succeeded only in enkindling it. This is, as it ought to be, for a man without rights—including the right to think and act according to his light—will be a non-rational being without the power to adjust himself to the challenge of a changing world, and surely be swept away into the limbo of oblivion as was the case with giant pre-historic creatures like the Dinosaur and the Brontosaur of times long forgotten. " I think - therefore I live " once declared Descartes, the famous French Philosopher. Very much earlier still, Pythagoras proclaimed that 'Man is the measure of all things ', meaning that everything in this world has to be judged from the stand-point whether it is good or bad for man who is the ultimate judge. The late President Kennedy struck an eternal note when he once said " A man does what he must—inspite of personal consequences, in spite of obstacles and dangers and pressures-and that is the basis of all human morality". All these are part of the priceless human heritage and explain why Man has survived to this day ever since his appearance on the earth during the close of the Pleistocene Age.

It is, perhaps, poignantly appropriate that we should bestow a little thought on ' Human Rights ' at a time when as President Kennedy said ' Man holds in his mortal hands the power to abolish poverty and all forms of human life. And, yet, the same revolutionary belief for which our forbears fought, are still at issue, around the globe—the belief that the rights of Men came not from the generosity of the state but from the hand of God." Yes—the fight for freedom and human rights is, certainly, not over. The Angolan thirsting for liberty from Portuguese rule, the Indian and the African battling in South Africa for



BRILLIANT INNINGS

Our Registrar Shri R. Natarajan, IAS, on deputation to IIT, Madras, is expected to rejoin the State pool this year.

the basic human rights of life and equality of all men, the Negro in the U. S., yearning to enjoy the privileges of being an American without regard to his race or his colour, the Harijan waging a winning battle against untouchability in a remote Indian village or a citizen groaning under dictatorships—individual or party - and pining for elementary rights like the freedom of opinion and expression, are all grim but real reminders to us that Man's quest is still on.

Some of our pet propositions in politics and economics have, unceremoniously, been pulled down in practice. When Thomas Jefferson wrote in the Declaration of American Independence that all Governments derive "their just powers from the consent of the governed" or Abraham Lincoln spoke at Gettysburg about " Government of the people, by the people and for the people " they never could even anticipate that Popular Sovereignty could result, not in the solution, but in the creation of problems, more baffling than the world has ever known before. They had not even dimly dreamt that in democracy legislators could be made to function merely as phonograph discs to record and reproduce the voice of the people ; executives to be glorified bell hops to do their bidding and judges to conduct bloody assizes whenever the mob howls for the sacrifice of an unsuspecting scapegoat.

Prof. Maxey was right when he said " Daily the voice of the people rolls out its divagations to the rulers of the world, a confusion of Tongues that defies interpretation and confounds statesmanship." Man has not, so far, conclusively proved that Democracy can be quite different from party dictatorship or rule by demangogues, playing on the harpstrings of peoples " emotions.

In the economic field, laissez faire, the economic philosophies of free enterprise and the capitalistic institutions of the Machine Age—have all been hurled down. Some of the inordinate excesses of individual enterprise led to the dethronement of Adam Smith and the fervent hope that collectivism was the idol to be worshipped next, if the Millennium were to be ushered and the rights of man safeguarded. But now there are serious doubts whether collectivism is the " open sesame " to the Millennium and whether it will not merely mean distribution of poverty in underdeveloped countries, with everyone getting poorer, without any becoming the happier for it. Some wonder whether control and restriction that go with collectivism have not cut at the very roots

of individual rights. Taxation is so high in most of the countries that the alternatives before anybody are not between surfeit and sufficiency but between subsistence and starvation. A man is not left at peace even after death. Death does not dispense with all his obligations. In fact, it energises one whole section of the Income Tax Department the Death Duties Section. Everyday, there are everywhere, in this world, more and more of insiduous and invisible inroads on individual rights, either under the guise of democratic regulation or economic make-believes. The shadows of the State are creeping in everywhere and it looks as if we are turning the clock back to the old Greek and Roman postulate that the supreme expression of human intelligence, the finest product of human endeavour is to be found in the State and the individual does and should not count as an entity. We are almost led, to wonder whether Rousseau was wrong after all when he said " Man is born free but is, everywhere, in chains". It is in this backdrop that it is but appropriate that we take the trouble to get acquainted with human rights and their history.

" Obedience"", Napolean, once said " Is man's destiny ; he deserves nothing better and he has no rights." This does appear brutal but, unfortunately, save for a few humanists and liberals, the political thinkers of the past had shared the same view. The individual in the ancient Greek world did not stand out as an entity—he was just an ingredient of his family and city. Plato was positive about it while Aristotle, the great Greek thinker, declared that " An isolated man must either be a Beast or a God." The Roman concept was no different-Cicero chanted that the individual existed primarily for the advantage and use of the State. In the Middle Ages, the individual was only a communicant of the Church and a lowly link in the chain of Feudal relationships, with no end and no beginning. Individual rights, in so far as they were recognized at all, depended entirely on the social status of a person-as a mere human being, he had no rights at all.

During the 15th and 16th centuries when the concept of nationalism was raising its head, what counted was power, order and security in those troublous times and this, the Monarchical institutions founded upon the doctrine of Divine Right, afforded. The individual continued to be nothing, though there were a dissident and protesting voices like those of Calvin, John Knox and George Buchanan, insisting that

Kings had no right to rule unjustly. But these were voices in the wilderness and none of these could achieve anything until after national security and stability had become so firmly grounded that legal authority could be challenged without daager to national independence. The England of Charles I and the France of Louis XVI and America at the time of the Boston "tea party" had become so thoroughly nationalised that revolutionary upheaval could not dissolve their bonds of nationhood. So it was that these countries became the stages for the enactment of the dramatic and dynamic struggles in which political theories proclaiming the sacredness of constituted authority went down before theories exalting the rights of Man. In England came the assertion of the historic liberties of the Englishman which were his heritage since the days of the Anglo Saxons and had found expression in the Magna Carta and the Petition of Rights. Pym and Hampden, Eliot and Edward Coke spread the idea that every English citizen possessed certain fundamental legal rights which could not be arbitrarily curtailed. In france, a bright sun lit up the sky after the dark night of absolute monarchy with the adoption of the Declaration of the Rights of Man and the Citizen. by the French National Assembly in 1789. "Liberty, Equality and Fraternity" were the magic watchwords of the French Revolution. Article I of the Declaration thundered that "Men are born and remain free and equal in their rights" while Article II defined these rights as "liberty, property, security and resistance to oppression." The great historical influence of the French Declaration of Rights was undoubted. It was the inspiration of most of the 19th century bills of rights in Europe and even the Bolshevik "Declaration of the Rights of Workers and Exploited Peoples" of 1918. The Declaration of Independence in America even broadened the triple rights of life, liberty and property to life, liberty and *pursuit of happiness*. The pregnant political principle that there can be no taxation without representation was proclaimed from across the Atlantic. It seemed that the rights of man have been guaranteed for ever and accepted by all."

But this was not to be. The scramble for markets, the race for colonies, the drive for cheap labour even at the point of accepting slavery as a divine dispensation in the 18th and the early 19th centuries, made men forgetful. Colonialism raised its ugly lead and with it came economic exploitation. The seminal ideas of liberty and equality, blazed by the English American and French Revolutions, were buried

A Poem

(S. R. Sivaramakrishnan & R. Subramanian)

Peace my heart ! Nor ev'r yet try to solve
The problem - How and what the guiding hand
Doth work - that man should yearn for, seek a thing,
But ever and anon thwarted should it be.
Vexed, forlorn, when grows to hate the same
As worthless, lo, on him then falls it pat.

Soapy moved uneasy on his bench.
Was that Jack Fros'ts card! Aye, on his lap
That fell, the dead leaf! He must now resolve
Into a committee of Ways and Means,
And provide against the rigour of Jack.
"Three months on the island" Blackwell's guest,
Was all he craved. For years it had been
His winter quarters. For he thought the law
Was more benign than philanthropy. Sure
His proud spirit detested, scorned the gifts
of Charity. For it was encumbered.
In humiliation you will have to pay.
Hence he chose to be the guest of law.
Soapy left his bench and strolled away
Up Broadway. He would dine luxuriously
At some expensive restaurant, declare
Insolvent and be handed o'er to a cop.
He thought of what to eat; and in he stepped.
The waiter-chief observed his trousers frayed,
And shoes decadent. Ready hands him turned
About, in silent haste conveyed to the walk.
Loafing off, he came to a corner, a shop
In sixth avenue. He caught the chance.
A cobble stone he crashing sent across
On to the display glass front. People came
Running, and a cop around the corner.

Hands in pocket, smiling, Soapy stood.
"Where's the man that done that" quoth the cop.
"See you not I might have" Soapy said,
Friendly but with sarcasm, as one
Would greet a turn of fortune good. But no.
Would ever a window smasher wait and smile
For parley with minions of law? He left.
Soapy, twice unsuccessful, now walked
Into a modest cafe, ate his fill.
"Now, call a cop; a coin haven't I,"
He told the waiter, "No cop for you"
He said, and called. The next was - Soapy felt
Himself, rising joint by joint
From that callous pavement. Waiters two
Had pitched him neatly on his ears. He beat
The dust from clothes. Was arrest a rosy dream?
He travelled far before his courage gave
Leave again to capture, woo. A Cinch!
A modest girl of pleasing guise he saw
Gazing at a show-window; across,
A large policeman, severe, leaned against
A water plug. Now he did play the role
Of an execrated 'masher'; set his hat
At killing cant and sidled t'ward the belle,
Made eyes at her and coughed and smiled and smirked.
Glad was he, the cop was watching him.
She moved away a little, stood and gazed.
Soapy followed, boldly stepped to her side,
Raised his hat and said, "Bedelia, there,
Don't you want to come and play in my yard?"
The cop was looking still, and all she had
To do was just beckon a finger; sure
Soapy could be on his way to the isle!
Right little, tight little isle!
She faced him, stretched a hand and caught his sleeve;
"Sure Mike. Blow me to a pail of suds".
She played the clinging ivy to Soapy's oak.
The cop they passed and gloomy Soapy grew.

Was he doomed to freedom? Cursed spite!
He shook her off at the farther corner, ran
Till he reached a play house, saw a cop
Lounging grand. And Soapy caught the straw.
He danced and raved, and drunken gibberish yelled
But the cop had turned his back on Soapy, twirled
His club, and told a friend "'Tis one of them
Hartford college Yale boys celebrating;
We have to leave them. Harmless, noisy though."
Soapy ceased this unavailing racket.
He muttered against the men with helmets, clubs.
Simply, would he into their clutches fall,
He seemed to them a king who could not wrong.
Soapy now had reached a quiet corner
Where stood a gabled, quaint and rambling church.
A soft light glowed from window violet-stained.
Above, the moon serene and lustrous shone;
Sleepy sparrows twittered in the caves.
The organist loitered over the keys to make
Sure of the coming Sabbath anthem. This
Sweet music drifted into the troubled soul
Soapy stood cemented on to the fence,
By that Anthem; he had known it well
When he had thoughts of roses, mothers, friends,
And ambitions. He viewed, with horror swift,
The abyss he had tumbled headlong in,
The days degraded, motives base and hopes
That long were dead and wrecked faculties.
Yet in a moment did his heart respond;
The conjunction of Soapy's state of mind
And influences of the old church wrought.
He was thrilled to the novel mood, and moved
By an impusle strong, to fight his fate.
Out of the mire he would pull himself
To make a man of himself once again.
And conquer evil which had hold of him.
He was young; and there was time to start
And find some work, a place: the morning next:

— A man had offered him a driver's place —
And be some body in this world; and be —
Soapy felt a hand laid on his arm.
Quick he wheeled and into a policeman's
Broad face he did look, who asked him stern
"What are you doing here?" "Nothing," replied
Soapy, "Come along, then" said that cop.
It was morning; the place the police court.
The Magistrate pronounced the sentence, just;
"Three months on the island", Blackwells guest.!

Time And Tide

Prof. B. Sengupto

(A talk broadcast from Tiruchi Station of the All India Radio, during February, 1964.)

There has, in recent times, been a considerable amount of lively discussion, if not controversy, on the subject of our requirements of technical personnel in different fields of engineering, training programmes best suited to them, facilities therefor and employment opportunities to absorb them on qualification after training. In order to view these factors in their proper perspective, it is necessary to examine our present state of industrial development vis-a-vis the industrial position obtaining in the pre-independence India.

During the second World War, it became apparent even to the *then* Government of India that if India were to survive in an Industrial Age, it would have to depend on her own indigenous manufacturing potential. It became quite clear that the war-ravaged countries in the West would not be in a position to assist India for at least some years to come. So, it did not come as a matter of surprise when, immediately after Independence, our national Government set up, what is known as the Planning Commission, to chalk out a phased programme of development, fix relative priorities and assess the expenditure involved. The First Five Year Plan, which was introduced in 1951 was pre-eminently a plan for better Agriculture. The plan aimed at self-sufficiency in the matter of food at a time when our country was passing through chronic food shortages. This done, the Planning Commission set about its main task of planning for the speedy industrialisation of the country. The Second and the Third Five Year Plans which visualised a national outlay of nearly 6000 and 10,000 crores of rupees respectively concentrated on the industrial development of the country. As a result, new basic industries have been started all over the country.. In their wake, have sprung up numerous ancillary industries, opening up new vistas of employment opportunities.

This phenomenal expansion can properly be gauged only if we examine a few cases of our new industry. Steel, for example- the output of steel in our country has gone up from 1.6 million tons in 1947 to over 6 million tons now and is expected to attain a target of 13 million tons by 1966. In the automobile field we

hardly had, before 1947, any automobile industry worth the name whereas we have at present over six major automobile factories, manufacturing almost all our requirements of automotive and commercial vehicles. The production of heavy chemicals such as sulphuric acids, soda ash, caustic soda and fertilizers has increased by 20 to 60 times during the second and the third Five Year Plan periods.

This spectacular increase in the industrial output of the country has swelled up the scope of employment for technically trained men in almost all fields and at all levels. Men are required by the dozen to carry out research, control quality, discover synthetic substitutes and forge newer and more effective weapons in our battle against poverty. Men are required to design and to manufacture, – men as supervisory levels and men for manning the factories, – skilled, semi-skilled and even unskilled craftsmen to produce for plenty.

A modest estimate of our manpower requirements made by the Planning Commission revealed that to supply the required number of technicians for our expanding industries, it was necessary for us to train by the end of 1961 about 30,000 degree holders and about 50,000 diploma holders in engineering, while for the Third Five Year Plan Period of 1961 to 1966, we have to produce at least 48,000 degree holders and 82,000 diploma holders, if we do not want to miss the industrial bus. The requirements of technicians – skilled and semi-skilled, – may easily be estimated from the above figures. For every engineer at degree and diploma level, we require between 5 and 10 men at the craftsman level. Thus, even a modest estimate will place our requirement of trained craftsmen at about 10 lakhs.

In 1947, we had in our country, 38 engineering colleges and 53 diploma institutions. Our annual admission capacity at degree and diploma levels was just about 3000 and 3700 respectively while our annual output was 1270 and 1440 per year respectively. The then training programmes were mainly focused on turning out maintenance personnel to help maintain plant and machinery and to construct roads, bridges and buildings. Research, design,

development and manufacture did not come into the purview of the college training schemes. But our development plans especially the second and the third Five Year Plans, what with their emphasis on the rapid industrialisation of the country, have made it obligatory for the Government to expand educational and training facilities in various technical fields and at various levels.

During the period 1947 to 1963, the number of engineering colleges has increased from 38 to 126. Technical institutes with emphasis on research and design have also been set up in different regions to meet the demand for trained research and design engineers. 227 new diploma institutions and polytechnics have been set up to train engineers and engineering supervisors. The admission capacity in the colleges in 1963 was about 20,000 with an annual output of over 7000 degree holders. The corresponding figures for the polytechnics were 40,000 admissions and an annual output of 11,000 diploma-holders. In addition to the usual branches of engineering and technology viz., Civil, Mechanical, Electrical Engineering, new branches such as metallurgical and mining engineering, geology, architecture, naval architecture, town and country planning, textile technology, leather technology, chemical engineering, aeronautical engineering, electronics, telecommunication and industrial engineering have been opened. The five Indian Institutes of Technology or the IITs as they are better known, established in the Northern, Southern, Eastern, Western and Central regions of the country with particular emphasis on post-graduate work and research, in addition to their large intake of students at the under-graduate level will naturally lend a powerful hand for training development, research, and design engineers in all fields of engineering and technology.

These all-India Institutions are open to students from all over India. The admissions to the under-graduate courses at these institutions are made on the basis of merit determined by a competitive examination held all over India while admissions to the post-graduate courses are based on the candidates' performance at the qualifying degree examinations. In addition, eleven Regional Engineering Colleges such as the Colleges at Warangal, Surathkal, Durgapur etc., set up in different States with emphasis on under-graduate studies also cater to students of all parts of India - though on a quota basis with admissions made

on a merit basis by the colleges themselves. The various other colleges under the control of various State Governments and local bodies are normally open to the students of the particular State in which they are located. The admissions are made either by a State Admission Board or by the Colleges or the University.

Facilities for postgraduate studies and research have been provided for in many of the older institutions like the Guindy Engineering College, P. S. G. College of technology, Bengal Engineering College, Roorkee University and Poona Engineering College over the past decade and more colleges will have these facilities as and when they are able to equip their research departments and attract well qualified research personnel.

The Diploma institutions are mostly controlled by the Directors of Technical Education of the States and the students after completion of the courses appear for the final examination conducted by the State Board of Technical Education.

As contrasted with the colleges and polytechnics which are set up to cater to bright students who are capable of digesting the sophisticated courses of Science and Technology, large number of technical training institutes have been set up to cater to those who are not too well up in studies but have a flair for practical work and an aptitude for arts and crafts.

These institutions have at present a total training capacity of over one lakh in various trades like carpentry, fitting, welding, foundry, instrumentation, smithy, electrician, wiring etc. In addition, many of the larger industrial establishments under the public or the private sectors have their own training centres to cater to their own special requirements of personnel. For instance, the Heavy Electrical Industries at Bhopal, Heavy Engineering Corporation at Ranchi, Hindusthan Steel at Rourkela, Bhilai and Durgapur and the Tata Iron & Steel Works at Jamshedpur have their own training centres to train personnel in accord with their special require ments.

The second and third Five-Year plans with their emphasis on rapid industrial development have opened up

large and fruitful avenues of employment in various fields. To man our industries, we require research workers, planners, design engineers with high intellectural calibre, men who can keep the industry modern and at the optimum point of production and what is more, plan for the future. We also require men with high technical skill, men who can supervise and guide production, control quality, and enthuse the workers under them to new peaks of production. In addition we require draftsmen, artisans, craftsmen etc. who are skilled in their trades and who form the *pabulum* of any production system. Above all, we must have a sufficient number of trainers at all levels, teachers and research workers to man our research establishments, colleges and polytechnics, well-trained instructors for training centres, men who will be able to train more and more men for the many research, technical, and industrial jobs that await them.

There are, therefore, great opportunities for the boys and girls of to-day such as never existed in subject India. Never have opportunities been greater for aptitude and training facilities being brought together, in the common cause of industrialisation *and its corollary,* prosperity. It is upto the rising generation to take the *tide at the flood and lead themselves and the country* to fortune.

Random Thoughts On Indian History.

R. V. S. Mani

It has become a habit in our post independence era to fish for glory in the past. Though, prima-facie, there is nothing wrong in that, the process becomes pernicious, when inconvenient data thrown up in the course of the search, are by design ignored, or what is worse, suppressed. The unbridled enthusiasm of a newly free society, like the bigotry of the convert, is understandable, but when truth is made a deliberate casualty, an urgent reapprisal, albeit agonising, has to be made with candour.

Our history is a sad narration of a subject country. To be very much alive to this unpleasant fact, is essential to see through events in the correct perspective. Any reading has to be purposeful: and more so a study of Indian History, so that errors are analysed and the knowledge gained be employed to steer clear of inherent national weaknesses.

To harp on the strings of ancient glory, time and again, will be dangerously akin to Emperor Nero's sadistic preoccupation during the fateful fire of Rome.

The climatic and geographical situation of this sub-continent invited the adventurous beyond the Himalayas. The langour resulting from the easy going life in the sunburnt plains of Hindustan made these conquerors, in their turn, fall an easy prey to the next set of determined attackers. Like this, wave after wave of brilliant and bold leaders came to India, subjugated the inhabitants, enjoyed luxury and soon got enervated themselves only to be pushed aside by the next set of fortune-seekers.

In this process, an advantageous factor like ethnic fusion did emerge, but was, unfortunately not harnessed to the task of forging a unified population.

The population was predominantly Hindu and by an accident, the attackers were Muslims. Cruelty and terror were the accepted living standards of the age. It suited the then best interests of the Governors to keep the different sections of the people severely separate, so that there could be no concerted effort to claim freedom.

All points of hatred were encouraged. Any area of common concord was never published. The intellectuals of the day spent their time and energy in abstract pursuits without bothering themselves about ideals of unity or concepts of good government. Lack of realistic approach to the problems of the day brought about a loosely knit population inviting centrifugal tendencies sooner rather than later.

It was not just an irony of fate that medieval India had a type of administration the people deserved.

Rulers in most parts of Asia were fed on flattery and licence which led to decadence in the body politic. Moghul ruthlessness had stamped out initiative and enterprise in the land. Merit was viewed with alarm.

Religious diversity was emphasised with favours and jobs going exclusively to the Muslims. A communal slant of a distressing nature was given even in factual chronicles.

Soldiery at any time is apt to be rough but to the Central Asian hordes, killing came naturally, revenge was a duty, pardon an infamy and plunder a means of livelihood. They invariably backed up the power that be, however tyrannical.

People enjoyed no rights. In the very nature of things, there could have been no question of a Magna Carta with the Moghuls, as came about in England centuries earlier. Society was prostrate. Initiative was conspicuous by its absence.

Against this bleak background, it goes to the signal credit of Gandhiji to have sounded the trumpet of freedom, without making the call martial. Freedom was won. The fine spirit, the Anglo Saxon sense of fairplay and clean struggle of the freedom-fighters, all played their part. The question now arises-We have won freedom but have we proved ourselves worthy of it?. Adult franchise has been introduced with scant regard to the qualification of the electorate. When elementary caution demanded severely firm control over the divergent elements within the country and extreme tact in dealing with neighbouring countries, our energies were frittered away introduc-

ing decimal coinage, metric measurements, and linguistic States, not to speak of settlement of language squabbles and boundary disputes. This had near tragic results, and the situation was redeemed only through the timely and generous help from friendly countries. This jolt rubbed home the point that only a strong fence ensures a good neighbour and only adversity tries friends. Democracy in its initial stages has not proved to be a cheap experiment for us. Time and again India has faced situations and a similar challenge has been posed now. How we acquit ourselves in this context, is of vital concern to our survival. The answer to meet such problems lies in the development of science and technology with a good government and a disciplined population to back them up.

Accidents Don't Just Happen

S. K. Kazi

Recently we had a series of lectures in "Accident Prevention" and "Industrial Safety." The lectures were very interesting. As such they were delivered by an "Authority" on the subject. He frequently cut jokes and the class roared with laughter. They were a few or the most interesting lectures we had.

He classified accidents as "pleasant" and "unpleasant" and dealt throughout with the unpleasant side of them. He tried to stress upon our minds how "bad" the accidents are or could be and how to prevent them.

But then it was all one sided and the pleasant side of accident's was left untouched.

Yes ! Accidents could be pleasant !

In fact at times we would rather get involved in an accident than just escape it. For example while turning in a street bend you collide with a good looking girl! Both lose balance but then you gather yourselves up to say with a kind of helplessness "I am so sorry." I bet the helplessness is just external. You are not in the least "sorry."Or may be you are sorry for one reason; that it lasted only a short time and what remained was the fragrance of the flowers she wore or hairoil she used. Mostly you are a little dazed and then walk off.

Such accidents are very pleasant !

Our lecturer kept on repeating, "Accidents don't just happen; they are caused". But I would change this to the pleasant side of it.

Accidents don't just happen; at times they are 'made'. I will give you an instance.

Once a man with a black eye and badly scratched face was smashing up a new car with a sledge hammer that he had borrowed from a nearby garage and he naturally attracted crowds. He would hit

the car, pause, take a breath and hit it again. He aimed blows at the mudguard, the radiator, the wind shield etc.

'Your Car?', asked a by-stander.

'My Car', said the man as he smashed the headlight.

He surveyed the results and grunted with satisfaction. He handed the hammer back to the garage man, thanked him, got into the car and drove off. As he disappeared the garage man explained:

'That fellow got mixed up in a fight last night. Got badly knocked. So he stayed at a hotel instead of going home. Called up his wife, told her, he had been in an accident. 'So,' the garage man shrugged his shoulders, 'so he had to have an accident!'

One philosopher said one fine morning "Life is full of accidents" but then he forgot to add pleasant and unpleasant. Accident surely is an unexpected event mostly, but not unpleasant always.

Call me stupid, but why should we think that accidents always cause losses to the victim, be it a firm or even the society ? In many cases it is quite different and besides if they cause loss to 'one' they surely will cause gain to another somewhere else.

Car accidents are most common as we all know. Two cars come from two directions and collide. The victims may be wounded seriously or may just escape with minor scratches.

But then as 'third persons' how many of us have not enjoyed the sight or how many of us have not come out with some queer remarks? Let us be true to ourselves. I have heard people pleased with accidents saying 'They deserve it. Why go so fast?'

An ex-justice of a big city court when asked as to what type of cases he came across most during his long years of service, said, "I had to investigate more car accidents by collision in which both the parties were observing traffic rules, both the cars keeping to the right side, within maximum speed limits and both the sides applying brakes before the accident occurred.

And when cases of accidents run in the court they create a lot of fun inspite of the gravity of the accident. One such instance is a

witness - a villager - whose companion was involved in a rail road accident, was asked to give an account in his own words. And he came out with :

"Well, X and I was walking down the track and I heard a whistle and I got off the track and the train went by and got back on the track and pretty soon seen X's hat and I walked and seen one of X's leg and then seen X's arm and then another leg and then over one side X's head and I say' upon my soul, something must have happened to X'!

When an account of such accidents appears in newspapers they are sometimes more funny than serious. One such account says :

'Mr. X Y Z drove accidentally over a stone wall and his car crashed. He would have been 39 yrs old next Sept.' Call it an accident of birthday !

I read in an insurance pamphlet, that a large percentage of accidents happen in the 'Kitchen' and I say it is right too. But I pity the husbands who have to eat them and pretend they like them. Thank God, I am a bachelor!

In Industry when accidents happen, they are followed by a long inquiry and report. I am sure writing a report is a hell of a job. One foreman was puzzling over the papers which had to be filled out explaining details of the accident in which one of his workmen lost his life by falling from a high scaffold. At last he managed to complete the task except one line that stumped him. Finally licking his pencil he applied himself firmly to the section headed 'Remarks' and wrote 'He did not make one!'

So is there not a pleasant side to an accident ? In fact it is much more than this. So I say,

"Accident don't just happen but often create lot of fun !"

Congress In Artificial Atmosphere

P. Poovanjaneya Sastry

Sardar Patel once said "Facts take revenge if we ignore them." Facts took revenge against India last October while were still wandering in the visionary world of eternal friendship with China. Mr. Nehru rightly said that we were living in an artificial atmoshpere of our own creation. And there he is with correct diagnosis. A year passed by since the Chinese attacked us. What did the Congress learn in this one year? The recent resolution of Congress at Jaipur shows that it is as it was.

An old maid (In a story) hangs about the court on an imaginary law suit and says with a perfect and pungent irony "I am expecting a judgment shortly. On judgment day" Our Congress socialism is like the imaginary law suit in the story.

What is Indian socialism? In a report entitled "the rationale of Indian Economic Organisation" Prof. J. K. Gabraith (the noted American economist) dubbed Indian socialism as post office socialism. The vagary of our leaders is that the very birth of public Sector solves all the problems. Public sector is only a shift of economic power from one hand to another viz. from individual to state.

In other words public sector also has to work through a certain set of individuals who may be no better than the people of private Sector. The public sector must be managed by efficient machinery. Above all there is the minister to take care of the efficient run.

But the Congress ministers use this privilege for selfish ends Today, virtue is something which is neither needed nor applauded by the congressmen. Congress of Gandhian era was incarnation of purity and justice. Today corruption is the family affair of Congress. The permanent human temptation is the temptation to be mean and Congress proves to be an example of it.

Each man in Congress looks at his neighbours to see whether they have he quite come up to the exact line of greatness. Every man calls himself leftist or rightist as if he is inspired by some ideology. We can

hardly believe that such a thing as greatness at all exists in Congress. Congress looks that it might be strengthened from above instead of strengthening it from below.Every man waits for a chance to become a minister. Each minister boasts that his performance is brilliant, dazzling and resplendent.

The mamby—pamby nonsense of nonviolence, the tipsy, trappy talk of nonalignment won't help us in reality.

That equality is a wonderful thing and that it must be achieved in India is a truth which every Indian believes to his dying day. Socialism so long as it means equality—is what every Indian wants. The mere prattle about this word by Congress woke up the beast of humour in him and he started to doubt about it. The congress pronounced the word nine hundred and ninetyninth times and the Indian finds suddenly that it is falsehood.

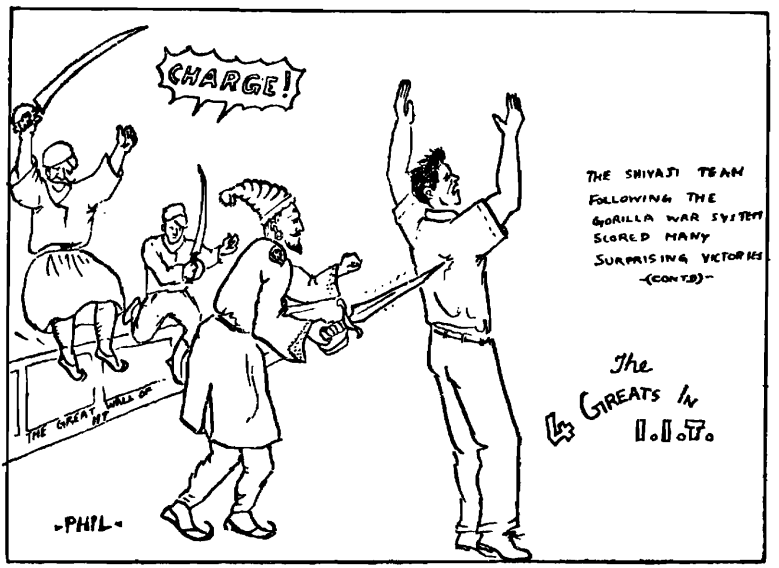
Another great tragedy of Congress is its reliance on the old generation. The average age of a central cabinet minister is about seventy. Thus Congress has denied the opportunity of serving the people for one generation.

"I do not like, I have never liked," Mahatma Gandhi once said" this reliance on me for everything. It is the worst way of managing national affairs. The Congress must not become, as it has threatened to become, one man's show, no matter how good or great that one man may be....."

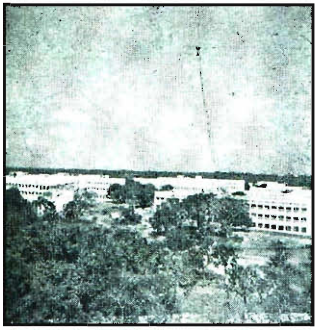
That is exactly what is happening today in the Congress.

No doubt, the position of the Congress party is a unique one. New democratic countries in the world have a political party in as dominant a position as the Congress in India. For the moment, India could be described as having a one party democratic system based not on the Coercion found in one party dictatorships but on consent. But, as we have already noted, there has been a progressive deterioration of the Congress since independence. "Communalism, casteism and provincialism" to use Nehru's own phrase, are corrupting the Congress today apart from the ideological conflicts within itself. So unless a national democratic party capable of providing stable government rises, it is hardly possible for India to carry through a programme of social, and economic change within democratic frame work.

ALL IN THE GAME: *by Goldsmith Philip Dhinakaran*

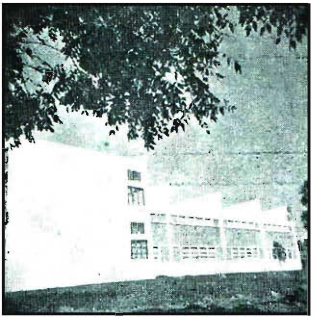


SENTIMENTAL SHOTS by V. L. PRASAD.

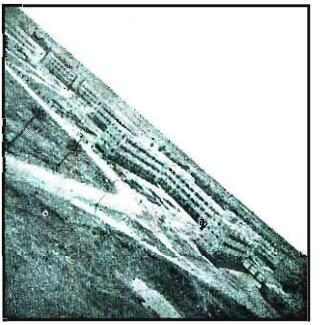


FROM A CARAVELLE ?

THE VERDANT TRUTH

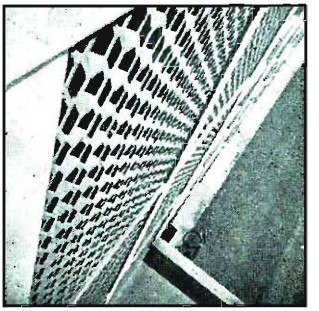


CHEMICAL ENGINEERING
LABORATORY

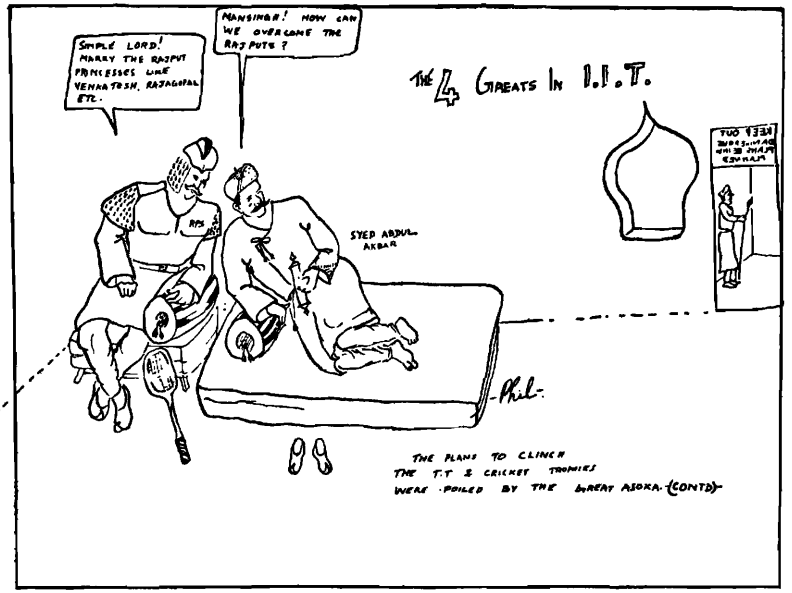


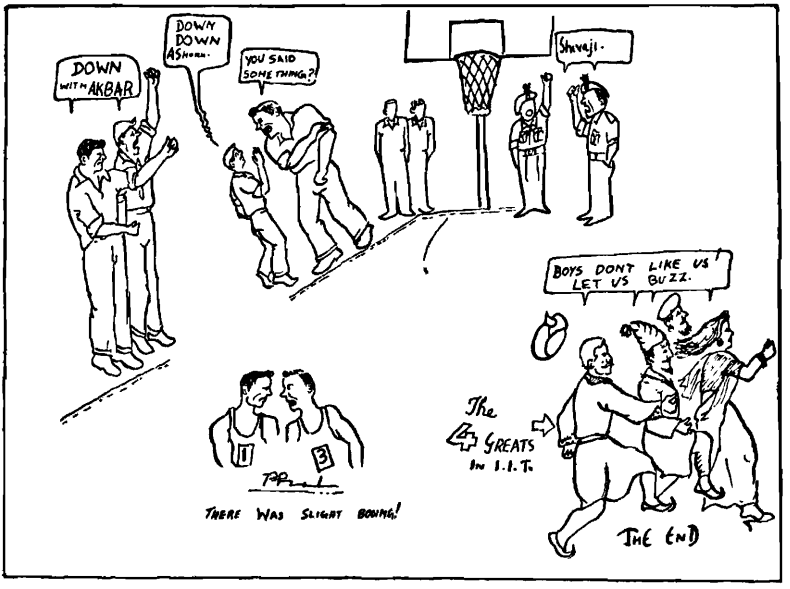
RIVERS FROM THE AIR

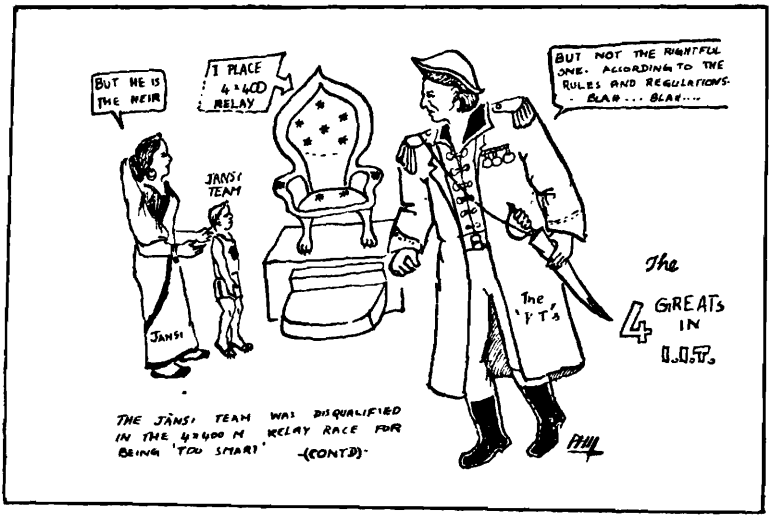
FROM A MILLION VOLTS
TO A MILLIONTH OF AN AMP



VERTIGO

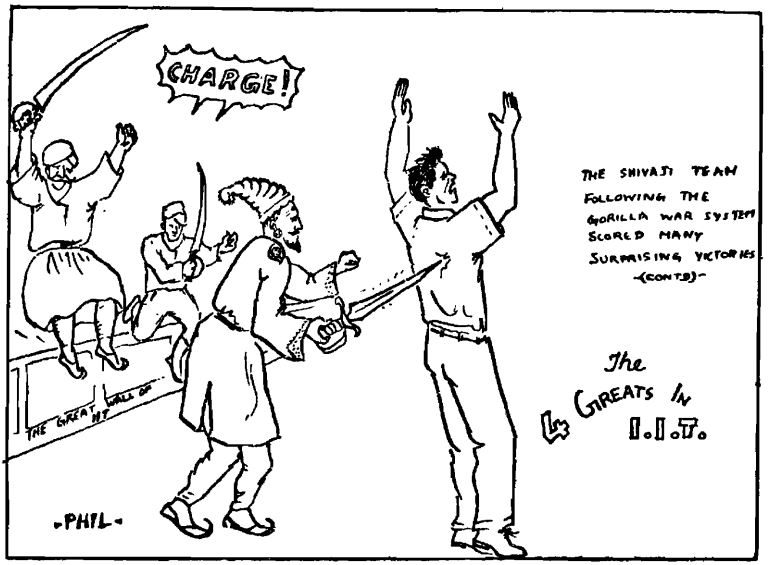

THE 4 GREATS IN I.I.T.
SIMPLE LORD! MARRY THE RAJPUT PRINCESSES LIKE VENKATESH, RAJAGOPAL ETC.
MANSINGH! HOW CAN WE OVERCOME THE RAJPUTS?
SYED ABDUL AKBAR
TWO YEAR
THE PLANS TO CLINCH THE T.T & CRICKET TROPHIES WERE SPOILED BY THE GREAT ASOKA. (CONTD)


DOWN WITH AKBAR
DOWN DOWN ASHOKA.
YOU SAID SOMETHING?
Shivaji.
BOYS DONT LIKE US! LET US BUZZ.
The 4 GREATS IN I.I.T.
THERE WAS SLIGHT BOWING!
THE END


BUT HE IS THE HEIR
I PLACE 4 x 400 RELAY
JANSI TEAM
JANSI
BUT NOT THE RIGHTFUL ONE. ACCORDING TO THE RULES AND REGULATIONS. BLAH... BLAH...
The 'I.T.'s
The 4 GREATS IN I.I.T.
THE JANSI TEAM WAS DISQUALIFIED IN THE 4 x 400 M RELAY RACE FOR BEING 'TOO SMART' -(CONTD)-
PHIL


BUDDHA! HERE I COME!
THE ASOKA TEAM LOST ITS GRIP IN THE GAME IN THE LAST MINUTE & LOST THE CRICKET MATCH. -(CONTD)-
The 4 GREATS IN I.I.T.
I I T
PHIL

ALL IN THE GAME: *by Goldsmith Philip Dhinakaran*



Patriot and Prophet

V. K. Vedapuri

The auspicious day of Makara Sankaranthi on 12th January, 1863 heralded a new era in the spiritual history of mankind. For on that day was born in Calcutta a child which was to "shake the world to its foundations through the strength of his intellectual and spiritual powers."

He was named Vaireshwar, as he was born in answer to prayers to Lord Shiva. Later he came to be called Naren or Narendra Nath and to the world he was Swami Vivekananda.

Naren had in the blood, so to say, leanings towards spirituality. Ram Mohan Dutta, his illustrious grand-father had renounced everything in quest of God. A man of sterling character and a friend of the poor, Vishwanath, Naren's father, was a distinguished attorney of the Calcutta Bar. Naren's mother Bhuvaneswari Devi was a typical model of Hindu womanhood.

Naren was a sweet child. Even as a lad his bearing was regal, intelligence astounding and memory prodigious. But there was in him an unbridled restlessness. The wandering monks greatly attracted him and he used to give them even the clothes he wore as alms! At his strange behaviour his mother burst out often "I prayed to Shiva for a son and he has sent me one of His demons."

From his early years Naren was impatient and wary of superstition and fear. He could not accept anything that was not in tune with his conception of Reality. He struggled to understand the 'why' and the 'how' of every phenomenon. He stunned Maharishi Devendra Nath himself inquiring whether God could be seen.

Once Prof. Hastie of Scottish Church College made a casual mention of Shri Ramakrishna at Dakshineswar while explaining to his students the mystic element in Wordsworth's poem "Excursion."

The Last Hour of the Morning

B. Madhusudan Menon, III B. Tech (Mech)

In the Indian Institute of Technology,
Where life is far from an orgy,
The morning hours consist of four,
The last being the biggest bore,
For this is the hour before the repast,
And Boy ! It sure is a long way from breakfast,
Thinking of grub the minds of the students soar,
Had they more freedom they would also roar,
Just think of all that food in the mess.
But alas ! it is such a long way to recess,
And so from the lesson all the minds wander,
And all the heads nod like that of a gander,
It is evident from the look on the lecturer's face,
That he is thinking of the good old days,
In days of yore he would have used a cane,
And it would have caused his students a lot of pain.
From these thoughts he awakens to the present,
Where for the student, life is more pleasant,
Of course the student should feel that the lecture is interesting,
But it is not so easy to keep pretending.
Suddenly as a bolt from the blue,
The lecturer gets a clue,
He realises at last the reasons for his pupils' behaviour,
And promptly acts as a benevolent saviour,
For after all he was also a student once,
And now with probably a dozen sons,
Suddenly he makes a decision,
Which makes him ignore the watch's precision,
With a sigh he lets off the class,
An action more appreciated than jazz.
And boy ! The speed at which the students flee,
Would put to shame an USAF Banshee !

Incidentally Naren remembered the sage whom he had met earlier for the first time in the house of a devotee. He was now possessed of a burning desire to meet the Maharishi again.

Naren met the Bhagavan and repeated his question, "Sir, have you seen God?"; the Bhagavan said "Yes, I have seen God" and what was more, he added that he could make even Naren see Him face to face. Naren was at first amazed; but scepticism led him to doubt if Shri Ramakrishna was a monomaniac and he returned home greatly puzzled.

Later the mystic touch of the Bhagavan overwhelmed Naren. Everything in and around him whirled and vanished for a moment. He took the strange experience for hypnotism and parted from the ascetic more confused.

A few more meetings brought him and the Bhagavan closer. Yet Naren refused within himself to accept an imperfect mortal as his Master.

However, the Bhagavan's love for him was boundless. He recognised in him his future messenger. He could hardly bear his separation. Indeed he himself set out to Calcutta in search of sceptical Naren and found him in a Brahmo Samaj gathering. A few orthodox members of the Samaj resented the Bhagavan's presence amidst them and created chaos and confusion and Shri Ramakrishna was rescued by Naren.

One day Naren laughingly exclaimed to his friends at the temple garden, "How silly! This jug is God! This cup is God! Whatever we see is God! And we too are God! Nothing could be more absurd." Just then Shri Ramakrishna who happened to come there, touched him gently. Instantly everything Naren saw was indeed what he was thirsting for!

Naren's days thereafter passed swiftly in study and meditation. Often he visited Dakshineswar. He stoutly opposed any idea of marriage and the Bhagavan also prayed that his marriage should never come off.

Naren had written his B. A. Examination. By then trials and tribulations took hold of his family all on a sudden. His father died·

Came days of suffering. Young Naren had to feed six or seven months. Grim poverty stared at him. Creditors started worrying. Relatives grew ungrateful and they even attempted to drive Naren and his family out of their house. Naren hunted for a living but met with disappointment everywhere. Even his moral character was maligned. He became utterly helpless and surrendered to the Paramahamsa for help.

The Bhagavan advised him to pray to the Mother herself for relief. Naren obeyed. He had divine revelations and could not ask for what he wanted. To quote Swami Vivekananda himself 'I went for the third time, but on entering the temple a terrible shame overpowered me. I thought, 'What a trifle I have come to pray to the Mother about! It is like asking a gracious king for a few vegetables. What a fool I am!' In shame and remorse I bowed to Her respectfully and said, "Mother, I want nothing but knowledge and devotion."

Thus Naren found his Guru in Shri Ramakrishna: "The doubting Naren was passing away; the devotional Naren, the spiritual Naren—Naren, the Hindu—was being born!"

"Sri Krishna had Arjuna; Buddha had Ananda, Gouranga had Nityananda...To Shri Ramakrishna Narendra Nath played this complementary part."

The Bhagavan entered into Samadhi on 15th August, 1886 and Narendra thereafter carried on His mission on being blessed by Mother Sarada Devi.

In his wanderings, the Swamiji reached Kanyakumari and meditated on a rock in the sea for three days. The vision of ancient India in all her splendour and glory rolled before him and he was overjoyed! In a moment he was moved to tears as he thought of India falling to the depths of degradation in contrast. There "the simple monk was transformed into a great reformer, a great organiser, and a great Master-builder of the Nation." "To him religion was no longer an isolated province of human endeavour; it embraced the whole scheme of things not only the Dharma, the Vedas, the Upanishads, the meditation of Sages, the asceticism of great monks, the Vision of the Most High, but the heart of the people, their lives, their hopes, their misery, their poverty, their degradation, their sorrows, their woes. And he saw that

the Dharma, even the Vedas, without the people, were as so much straw in the eyes of the Most High. Verily, at Kanyakumari the Swami was the Patriot and Prophet in one!"

No wonder, endowed with superhuman energy, magnetic personality, catholic scope of mind and inborn universality of outlook and sublime eloquence, Swami Vivekananda set forth to command instant recognition wherever he went.

His visit to America was an "astonishing venture." Faith was his armour, ahd he found his passage money raised by his well-wishers in Madras by a door to door campaign. He set sail for America on May 31, 1893 for a Conference to be opened somewhere someday and without any credentials! Thanks to Prof. John Henry Wright of Harvard University, he managed to gain entry into the Parliament of Religions after passing through untold sufferings.

The Swamiji arose last to speak. "A striking figure, clad in yellow and orange, shining like the sun of India in the midst of the heavy atmosphere of Chicago, a lion head, piercing eyes, mobile lips, movements swift and abrupt, the Swamiji bowed to Devi Saraswathi, the Goddess of Knowledge, and adddressed the august assembly as "Sisters and Brothers of America." The Parliament had gone mad and " everyone was cheering, cheering, cheering."

"It was human eloquence at its highest pitch," expounding the way to the Realisation of a Universal Religion.

Later the Swamiji visited England, France, Germany and other countries and preached the cardinal tenets of Indian culture and philosophy. After long and arduous work both at home and abroad, the Swamiji passed away at the age of thirty nine, thus fulfilling a prophecy which was frequently on his lips, "I shall never live to see forty."

Hundred and one years have rolled over since the birth of Swami Vivekananda. Today he lives in and through the innumerable Ashrams and Mutts as well as other educational and social institutions whose outlook is humanitarian, spiritual and non-sectarian.

Truly mankind owes a debt of incalculable magnitude to Swami Vivekananda and there could be no greater monument to his glory than

the perpetuation of his valuable teachings in word, thought and deed. How worthy of emulation a few of his utterances are on "Man-Making Education" and "Physical Strength" in the context of present day India ! To quote them in conclusion :-

"We want that education by which character is formed, strength of mind is increased, the intellect is expanded and by which one can stand on one's own feet...The end of all education, all training, should be man-making. The end and aim of all training is to make the man grow."

"Physical weakness is the cause of at least one third of our miseries. We are lazy; we cannot combine. We speak of many things parrot-like, but never do them. Speaking and not doing has become a habit with us. What is the cause? Physical weakness—First of all, our young men must be strong. Religion will come afterwards. Be strong, my young friends, that is my advice to you."

On Faith.

T. Gopichand

A change in human beings–physically and mentally - is both imminent and imperative. They react to ideas, circumstances and situations- the later two culminating often from the former. They reconcile, adjust to or circumvent the new ideas. A static human society - static in every respect - was never recorded in human history, not even dreamt by the wildest Utopian. The ebb of human activity flows smoothly bounded by faith.

Change in human beings is spontaneous and the reasons for such motivation are unknown and unknowable. An young person baffled by situations encountered by him asks a wise old man 'Who am I?', 'Wherefrom I have come?', and 'What is all this business of human existence?' The wise old man answers: 'Ever since the freak of intelligence dawned upon humanity man' has been asking the same questions. The questions were not answered and shall remain un-answered. But faith which is the guiding rail on which ideas and ideals are put on wheels, just exists. Faith is like an all pervading ether, the absence of which is beyond all human comprehension.

Belief is akin to faith and faith includes belief. Belief is more easy to comprehend. It can be illustrated easily. Belief provides an anchor for sailing the troubled waters of human life.

Belief in one's own capacities makes a life worth living. Belief in one's own country or society creates a virile nation. Capacity to do a particular thing or to achieve a particular goal is however, only one of the facets of human activity.

Why should one have belief? A direct and complete answer cannot be given. Two stray and totally un-connected ideas present themselves to me for analysis and collation.

Mahatma Gandhi once said 'Let the wind blow from all directions across your house. Keep your windows open, but let your feet be firm

in the soil'. The reference is to the necessity of belief in one's own religion, The second one is from a parable. In it Lord Krishna says, ' Do your duty and leave the rest to me '.

To me both of these sayings bring forth the necessity of belief.

Neither the necessity of faith nor the existence of faith can be explained with the same facility. It was humourously pointed out by one scientist, for whose opinion I have great respect, that the relationship between faith (the necessity of) and human activities or day to day existence is akin to Heisenberg's principle of uncertainty. One cannot talk of both faith and human existence with the same precision.

Words to define faith and arguments to prove its necessity do not make an impression on all individuals. Those who are a questing for reality and those who seek truth first become aware of faith. Those who are aware of it only will be enlightened regarding its nature. However, I felt the reading of the following pieces may help to get a feel of it :

1. A Chapter entitled 'Quest for reality' in 'Recovery of faith by Radhakrishnan.

2. Jean Paul Satre's existentialist philosophy and in particular a book called ' The age of reason'.

3. H. G. Wells : (i) The mind and its last tether and (ii) the last chapter in 'Ann Veronica'.

PHOTO OF THE ACADEMIC STAFF MEMBERS WITH FINAL YEAR STUDENTS, 1964.

Sitting (Left to Right) : Dr. P. C. Verghese, Prof. Gupta, Dr. Heitland, Dr Ramseshan, Dr. Rouve, Dr. I. R. Rao, Prof. E. G. Ramachandran, Dr. D. Venkateswaralu, Dr. Seinecke, Shri R. Natarajan (Registrar,) Prof. B. Sengupto (Director) Dr. W. Koch, Prof. R. G. Narayanamoorthy, Dr. N. Klen, Prof. R. Krishnamoorthy. Prof. S. Sampath, Dr. Ing. Stahl, Prof. M. V. C. Sastry, Dr. K.W. Haug, Dr.W. Scheer, P. K. Ramanathan (Exe. Engineer)

Standing 1st Row (Left to Right) : Sarvashree K. S. Sampathkumaran, U. N. Srivatsava, Dr. S. C. Das, Dr. Jayanti Lalitha, Dr. S. K. Srinivasan, Dr. Sethuraman, G. T. Sundarajan, K. S. Sankaran, V. S. Kumar, P. S. Srinivasan, Dr. Srinivasa Raghavan, Dr. R. Vasudevan, N. R. Rajappa, Dr. P. B. Rao, Dr. C. Ramasastry, N. V. Chandrasekaraswamy, S. V. Sharma, Dr. M. S. Vairana Pillai, Dr. Banerji, G. Sundaram, Dubey, T. S. Rajagopalan.

Standing 2nd Row (Left to Right) : Sarvashree M. K. Muju, V. G. Joshi, M. M. Sarin, M. C. Gupta, Dr. M. K. Achuthan, S. Balakrishnan, Rama Iyer, Abdul Khadar, Panduranga Rao, G. K. Narasimhamurthi, Alwar, M. Veluswamy, Y. R, Nagaraj, B. S. V. S. R. Achariyulu, Dr. R. G. Sharma, Dr. Ramachandran, Gopala krishnaiya, Sathyanarayanan, Dr. C. N. Pillai, J. Joseph, B. Bhattacharya, P. C. Gupta.

Standing 3rd Row (Left to Right) : Sarvashree P. K. Jacob, Nagarajan, Dr. H. Paul, Dr. Srivastava, A. Bharadharajan, R. Nagarajan, M. Ramanujam, S.B. Sastry, G. V. N. Rayudu, Ramaswamy, V. T. Shadagopan, N. Ragavan, N. Subramaniyam, V. Srinivasan, Venkatachalam, Dr. C. Kalidas, A. C. Gangadharan.

Standing 4th Row (Left to Right) : Sarvashree V. L. Prasad, Dr. Aravamudhan, Dr. V. Srinivasan, Dr. C. S. Swamy, G. Viswanathan, B. U. Gopalam, K. Narayanan, C. Sivaprasada Rao, Ramana Rao, V. D. Muthaiya, Kalyanasundaram, Dr. Sivaramakrishnan, T. P. Ganesan, Dr. Subbaraju, Ramoji Rao, Raghuram.

Standing 5th Row (Left to Right) : Sarvashree B. V. Ramanamurthy, V. S. Srivastava, C. S. N. Murthi, C. Ramaiah, Jacob Dominic, B. Laxsminarayanan, Chimanlal, Chawda, S. D. Tauk, Ramanand Jha, P. Mohan, K. V. Srinivasan, M. V. Narayanan, R. Devanantha, Premananda Prabhu, P. Ananda Bhat, G. Harinarayanan.

Standing 6th Row (*Left to Right*) : Sarvashree Radhakrishnan, A. T. Santhanam, I. C. Mathur, R Ganesh, T.Varadarajan, P. M.V. Subramanyam, C. Easwaran, Nokheylal, K. L. Asanare, J. Venkateswaralu, P. S. Krishnamurthy, V. Koteeswaran, L. V. Pattabiraman, K. Ramachandra.

Standing 7th Row (*Left to Right*) : Sarvashree Venkateswara Rao, Rajeswara Rao, Srinivasa Nageswar, G. Visvanathan, Venkateswaran, A. R. Jayaraman, P. D. Prabhakar, Gyandranath, P. Venkataseshiah, B. S. Baliga, B. S. Sudhir, Chandra, A. R. Sangameswaran, S. Gowrinathan, M. Bhaskaran, Parelker.

Standing 8th Row (*Left to Right*) : Sarvashree S. K. Kazi, G. D. Daga, S. Gopalakrishnan, G. N. Sarma, P. K. Prabhakaran, A. K. Mehrotra, C. P. Vijayan, T. Gajendrapaul Singh, A. Malleswar Rao, G. L. Narasimhan, D. Satyanarayana Rao, S. R. Thangavelu, C. G. Krishnadas, M. C. Uttam.

Standing 9th Row (*Left to Right*) : Sarvashree A. K. Mithal, J.C. Kalyan, K. K. Dutt, G. E.C. Vidyasagar, R. Seshadri Reddy, Madhava Sampigethaya, C. T. Kumarappan, M. R. Sambathkumaran, S. Ramkumar, R. Natarajan, P. Devnani, Vijay Krishna Batra.

Sparks From The Accounts Anvil.

G. T. Sundarrajan

"Ever let the Fancy roam
Pleasure never is at home
But when Accounts - Audit combine
Pleasure is for ever mine."

Strange but True

1. Construction of a building completed in all respects within the original estimate.

2. Annual account of a Provident Fund of a subscriber, issued by the Account General completely correct, without any missing credit.

3. An Accountant passing a bill without even once returning it.

4. An Auditor who is happy to issue a 'Nil' Audit Report on the accounts of a Project.

5. The Accounts Section of a big organisation of Government given adequate and efficient staff and accommodated in a convenient place side by side with the Administration Section.

6. A gazetted Officer not getting excited over a dis-allowance by the Treasury of Rs. 0.31 nP. from his medical reimbursement claim for Rs. 984.87 nP, the deduction being due to an error in totalling by the claimant.

Too Strange to be true

1. It is reported that with a view to avoid delay in payment of medical claims, an office has installed an electronic device by which the claim presented at the Accounts Section is checked immediately and passed on to the Cash Section for payment, before the claimant arrives there—

Note: The Accounts & Cash Sections are in the same room

2. Without any such device to help him and relying merely on the human brain, an Engineer check-measures items of work recorded in a measurement book, without going to the site of work, and corrects errors in the classification of soils.

3. A senior Instructor in a Government Training College does not complain of heavy work, though, he is allotted 1 hour a week throughout the year- except during May, June & December when the college closes for the vacation and during April, October & November when there is no portion to be gone through. Yet, it is reported, the Government have in pursuance of their liberal policy in the matter of education, appointed another Senior Instructor on the same subject, so that the work - load may be distributed.

Lullaby

A. Anantha Rama Iyer

Child, sweet sleep.
Face thine Heaven reminds,
Innocence two orbs beam,
In thine sleep peace peals;
Heaven in Thee abides.
Our sinfulness chides
Seer and Thee agree
Very God's pedigree.
To Thee he bows
None, Thee hates

When adolescence dawns,
Thine innocence fades;
Passions low prevail,
Which we poor curtail.
Wealth and station puff
Virtues' very handcuffs.
Men scheme and hate
Piety feeble feels,
Sympathy, native congeals.
Who childhood forgets not
Grace Heaven's sure got.

Silence

What venom tongue spills
Man and man kill
Silence men seldom keep,
In quarrels many weep
Gossip, most pleases,
Revel in teases.
Silence, many a quarrel save
Peace's path sure pave.

Golden, ever Golden,
Blame, men-foremost.
Tongue wags and brags
Their faults even hinted
Like angered snakes hiss
Tongue, words high pour;
Silence flags, feeble show;
Blows, stabs, murders prevail
If the parties brutal be.
In pluck's name some,
Words vulgur give,
What shame comes,
Reckon not before.
Schemers, silence keep
But brethren to cheat.
Saints, quiet adore
But for spiritual store.
World's honour due.
Silence, thoughts strengthen
Irritability effective erases.
To Maker a mighty move.

Destiny Steers Ambition

D. D. Samuel, V. B. Tech.,

I dwelled in a tower of imagination with unpardonable pride of a scholar considering my prospects as the Director of International Federation of Engineering Experts. The mere thought of it elevated me to such heights of pleasure and mirth that I became deaf to the call of the postman at the door. A registered letter was handed over to me. With an optimistic enthusiasm I considered it as the fulfilment of my hopes. Of course it was, but not entirely. Having remained jobless for eleven months I had no real intention of celebrating an unemployment anniversary. To that extent it was a welcome ; but in comparison with the infinite dimensions of my imaginative castle this piece of information was an insignificant infinitesimal. It was an appointment order for the Post of Junior Technical Assistant in Institute of National importance.

With imaginations interrupted and pride hurt I was on the horns of a dilemma. To remain imagining for ever or to suffer as a JTA for life. This was a decisive moment in my life being presented with the task of choosing between two horrible evils. I chose the later (just as all wisemen do) for it was the lesser of the two evils.

Never in my life had I climbed a platform to address an audience. I had no idea of ways of winning the Students' heart. I thought I'll launch a successful programme in an original fashion. With this hope, dressing myself very smartly to my own standards (which I later discovered was not only low but funny) I made a 'Gala Grand Entry' into the II year lecture hall in which there were about 120 students. I was surprised at the pin-drop silence I commanded. It was a few seconds later when I found that none of them had taken notice of my entry. They were all busy in their own thoughts! I tried to cough and clear my throat and make my presence felt. I miserably failed.

I managed to say after about a minute, "Gentlemen". Immediately all the heads looked up and I was attacked by two hundred and forty eyes all aiming sharply at me. It was the first time when so many eyes simultaneously cast their view on me. I felt highly embarassed and shy that I forgot all my introductory speech which I had prepared the previous day. Regaining little confidence I proceeded to introduce myself. Before I could finish, from a corner came a question, "Are you an assistant Professor?"...another one "Are you married?"...What are your academic qualifications? etc.

The questions were so numerous that I remembered the last ones more and hence decided to answer from the back. I told them I have obtained a B. Tech. degree and they all asked me "How?" I tell you honestly that I would have answered any other question easily but not this. Answering this question would mean betraying my own Institution!

Students continued to be restless. In my nervousness I told them I am still a spinster! By heavens, there exploded many bombs of laughter and roar and cheer with which came also a suggestion, "Then we can help you?" Even a riot will be less noisy than that unfortunate lecture hall of which I was in charge. They reminded me I have not answered their questions. I kept answering and came to the first one, that of my designation. That was a heavy question for me. With a feeling of humility and uncertainty about the reaction, I told them in a low tone that I am a Junior Technical Assistant. Contrary to my expectations the majority of the class felt they were too 'big' for me or I was too 'small' for them. They gathered their books and started walking out of the class room. Providence helped me by sending the head of the institution along the corridor at whose appearance students came back and resumed their seats. They must have been cursing me and the institution.

Being fully aware that my concept of planes and lines and and in general of descriptive geometry were not too sound, I was obliged to impart my knowledge of this subject to those students

around me. I had planned to devote that lecture for a general discussion and I started, "Just as any man in this world should consider his experiences in their own perspective for deep understanding, so also an engineer should look into the perspective view of any object for its overall estimation". I had a vain satisfaction of an excellent expression; but I little realised that the analogy was too meagre and shallow in the same. This was expressed by their frown.

It was about 12 O'clock when suddenly one Sardarji stood up and asked me, "Sir, What is geometry?" Clever as the sardars are and more so at their appointed hour cleverer was I at the self-same hour in not knowing what geometry was, yet claiming to teach the same.

The lecture somehow came to an end with a feeling of relief for both parties. These students who have embarrassed me were all infants; too small and yet too big. Thus my crushed ambition suffered a second blow at the hands of destiny. I had but one satisfaction. I had already provided an amusement to my students and was sure I had lots of them for future!

A Story of History

M. Venkateswara Rao

There was a ruined cavern on the outskirts of a very old city. Spiders and bats were the only residents of the great cavern and school children were the only frequent visitors. The latter used to come every evening to play in the interior and to enjoy the kaleidoscopic sight of the fish in the pond inside the cave. They were so fond of the cave that they had embellished its walls with all sorts of sketches and scribblings of chalk or charcoal, and made it a store-room for various articles like dolls, broken glassware and other fancy goods, with which they would conduct their games.

On evening, a group of children was intensely immersed in their usual sport and frolic. One small boy was making paper-boats to let them sail in the pond; one little girl was having fun with her friends out of the drawing of a pony she had made in the classroom; a bony puppy was playing with a rubber ball at the other end of the cave.

All of a sudden, there was a tremendous thud and a crash.....A huge rocky mass had fallen down from the roof of the cave with such a terrible noise as to be sufficient to freeze the blood. The panic-stricken children had rushed out of the cavern, leaving every thing behind, even without noticing, the tragic death of the young dog under the falling debris. No sooner they had come out than the rest of the roof collapsed down flat.....

* * *

.....After a period of ten years.....

A geologist and a metallurgist were treading on the meadows on the boundary of the same city. The latter had suddenly picked up a stone glistening with a greenish tint.

"Here is the confirmation we are searching for"; he shouted out delightfully. The geologist came to share his joy.

They were on errand of the Department of utilization of National Resources to explore and exploit the copper ore in that area, and what they found was the promising deposits of malachite.

After the usual delay, they started prospecting for the ore with zealous hope. But soon, to their great surprise, the borers had touched upon a very hollow space, during the process of mining. On further digging and investigation, the geologist concluded that they had been digging a mound under which lay a huge cave which on further exploration may yield some invaluable treasures of ancient History.

* * *

The National Bureau of Archaelogical Investigation had sent an expert archaelogist and an anthropologist to the site where the exploration of malachite was going on. The mining of the ore had been temporarily stopped, and the spot had the appearance of the excavation of Ur in Sumaria.

After an endless endeavour and research, they prepared long report of 285 pages. The report was published in the Journal of the National Bureau of Archaelogical Investigation, which, later on, had to be summarized and added to the previous facts (obtained in a similar fashion) regarding the culture and civilization of the pre-historic Man. The gist of the report is presented below : -

"The successful excavation near the oldest city enlightens the historian on the following facts. The cave-man, who had lived here probably ten thousand years ago had the most complex civilization history has ever known".

The sketches and inscriptions on the walls of the cave show that he had a great artistic taste unsurpassed by any other of the same species existing at that time. Peculiarly enough, the inscriptions consisted of ideographs - both hieroglyphics and cuneiform script.

The Chief item of his food was the fish a fact confirmed by the presence of considerable number of heaps of skeletal remains of fish inside cave.

The discovery of a skeleton, which has been identified to be that of a dog, throws light upon the fact that the cave man had domesticated animals, especially dogs.

The drawing of a horse on a papyrus found in the cave is a clear indication that he was not completely ignorant of the usefulness of the horse.

The figures, both pictorial and numerical, on the papyri found in the cave show that the cave man was great mathematician as well as a book-keeper;

He might have been probably in other allied sciences also (this fact will be confirmed soon after deciphering the inscriptions on the papyri.)

The most surprising thing is that he had used ink, with such a consistent at composition that no chemical reagent known so far could erase its stain.

The broken pieces of various articles excavated throw evidence on the unparalleled skill of the cave man in the manufacture of glass, leather and rubber.

The discovery of paper models of the steamers and ships in the cave made us surmise that he was not only an expert in navigation, but an enthusiast of naval explorate too.....

Investigation is being carried out for further enlightenment".

* * *

Nosegay

(K. Narayanan, Department of Chemistry)

"Fortune favours the prepared mind".....Alexander Flemming :

Alexander Flemming, the discoverer of Penicillin in 1929, in one of his private talks with men of Science, was explaining to them, how he got at the new discovery. His emphasis was that any true scientific worker has to keep himself abreast with the amazingly expanding vistas of knowledge in the different allied branches of Science and when such a worker is equipped fully with sufficient intellectual fodder, Dame Nature favours such a person only. Nature chooses to release the new discoveries through such prepared minds alone. Alexander admitted that he did a lot of reading and laboratory work and anybody in a similar situation as his, would have himself discovered penicillin. He added that he did not therefore deem himself as an extra-ordinary genius, who alone can tower eminently over the rest of scientific fraternity and so discover the first antibiotic. This is a glorious instance of the sense of humility, which truly characterises every great scientific worker, worth the name. Alexander's pointed observation of the need for more and more strenuous work - theoretical and practical is nothing but an echo of the truth found in Edison's definition of genius, as one who combines ninety-nine per cent perspiration and one percent inspiration. Let us join hands and sing with Longfellow, thus :

"Lives of great men, all remind us
We can make our lives sublime,
And departing, leave behind us,
Foot-prints on the sands of Time."

A School Inspection

The local high school was unusually humming with activity because of the mid-term inspection and the students as well as teachers were preoccupied with making all sorts of arrangements in the school to impress the Inspector of Schools.

The eventful day came and the Inspector chanced to enter a tenth standard science class and listened to the class-lecture. When the lecture was going on, the Inspector intervened and questioned a student as to how a dynamo worked. The student blinked and instead of keeping silent, he was murmuring to his neighbour. The Inspector accosted him by saying that great inventors like Thomas Alva Edison and Michael Faraday were able to invent many new machines at his age, whereas he did not know even the working of the dynamo. That student happened to be a turbulent bully of the class and he immediately surprised the Inspector with a question, "Sir, that is the pitiable case with me. At your age, Sri. Balagangadhara Tilak wrote the book "Gita-rahasya, How about you?" This question embarassed the Inspector and he abruptly left the class. The day next to this incident, there were groups of students parading in the streets at different spots and all of them were discussing the untimely death of the Inspector of Schools, who did their school inspection just the previous day. The fact was that the Inspector committed suicide leaving a small note in his shirt, which read as follows, "I end my life, because I could not act up like Tilak." All could reason out the development of circumstances, which resulted in the sad demise of the highly sensitive Inspector of Schools.

In the field of education, the pedagogue as well as the student are both apt to be highly sensitive and hence there should be perfect mutual understanding of the psychology of each other, which alone would ensure a healthy state of affairs.

Charles Darwin :

The famous Darwin was trying to explain his "Theory of Natural Selection" and "Origin of Species," which he was able to expound to the world after his observations during the five years' voyage. In one of his lectures, he mentioned that it was quite possible to conclude from the available evidences, that man must have descended from ape. This revolting idea of trying to rationalise the evolution of man by the principle of Natural Selection and not attaching importance to one primordial Creative Force Viz-God, was not liked by many of his contemporaries. One such was Bishop Wilberforce. He asked Charles Darwin, "Was it from your grandfather or grandmother that you got inspired to put forth such a theory of the Descent of Man from an ape?" Darwin was not to be cowed down by such impertinent and damaging

observation of the Bishop. He coolly retorted, "I would rather prefer an ape to be my grandfather or ancestor than intellectuals like you, who do not wish to accept sensible ideas such as I gave now." Quite often, we find newer scientific ideas receiving such damaging oppostion from contemporary people but many a scientific discoverer brave such opposition and maintain the validity of their findings.

A Lunatic Asylum :

An American and an Indian were going about Madras City, sightseeing. The Indian showed the important sites in the City. Whichever building the Indian showed, the American pooh-poohed, saying that the smallest of the buildings in America will be like the L. I. C. building in the City. The Indian wanted to teach him a lesson. He took the American to Kilpauk mental hospital and pointed out to him the fine bungalow type of the building over there. Immediately, the American retorted that America abounds in such bungalows. The Indian revealed to him, "It is quite necessary that you, Americans must have many more such bungalows in your Couutry. This is the lunatic asylum or mental hospital of the City." The American was thus cut to the quick and he realised his mistake and apologised to his friend.

Outright Nationalism :

It is common to find in Russian Journals and books several excerpts here and there, devoted for enunciating and defending the ideals of Russian Nation. For example, in a Science book series, in the chapter *on Hydrogen Bomb, a good discussion of the thermonuclear reaction* and its development is there, followed by a paragraph at the end, which says that even though several countries are preparing hydrogen bomb, the Russians only are trying to use the hydrogen bomb for peaceful and constructive purposes and not for destructive purposes. The Russians have developed this propaganda spirit to such an extent that they would not brook any achievement in any field, not topped by a Russian. When the first successful scaling of Mount Everest by Sir Edmund Hillary and Tensing Norkay was on the front page of then Newspapers all over the world, there was a report from a Russian Journal that one Russian had previously done a successful climb on the Mount, but it lacked publicity. Yet another case is that when it was

announced that the library in a particular city (not a Russian one) was the largest in the world, there was the Russian comment, that the library in Moscow is unparalleled and takes the first place. This tendency of Russians to claim credit for each and everything in any field is revealed by the jocular popular story namely when Adam, the first man climbed the tree in the garden of Eden to pluck the forbidden fruit, he was surprised to see another person perched on the branches of the same tree and on enquiry, the person revealed his name to be papilov!

Juxtaposition

Justice Hog had an interesting case, when a criminal Bacon, by name, was pleading his best to show that he was not guilty. Bacon could not convince Justice Hog of his innocence. As a last measure of self-defence, Bacon pleaded, "Hon'ble justice! Your name is Hog. My name is Bacon, which normally refers to the flesh of the animal 'hog'. What a similarity is there between our names! Can you not release me at least for this semblance? The Justice laughed at his remark and said "Hog (a hog) becomes Bacon (bacon) only, when it is shot". The sentence was confirmed.

A repertoire :

Andhra Kesari Late Sri. T. Prakasam, a ready-witted lawyer had a lucrative practice. The Judiciary had a great admiration for his pointed observations and wonderful advocacy of the cases, which he handled. One day, it so happened that one of the Judges, who happened to hear Sri. Prakasam's arguments in a particular case was tired of his observations and so remarked, "Hullo! Mr. Prakasam! I have been hearing your spirited arguments all this time. All your arguments enter through one ear and get away by the other without making any impression. Why is it so? Mr. Prakasam resourcefully retorted, "That is because there is nothing in between the two ears". Those assembled in the court, laughed and the particular judge also joined the chorus of laughter in appreciation of Mr. Prakasam's ready-witted reply.

Unity And Division :

A politician was explaining to his audience, how when there is the feeling of unity in a society or Nation, there can be no selfishness, egoism and parochialism and how, when there is disunity among the people, these bad traits reign very rampantly and eat into the very vitals of any

body-politic. He was trying to give several illustrations in support of his arguments and he remarked that a careful look at the two words viz. 'Unity' and 'Division' will reveal that there is only one "i" in the word 'unity' and three "i"s in the word 'division.' The 'I' or the ego will have a smaller sway in corporate life, whereas the ego of man will show its ugly head in practically every walk of life in a divided state of affairs and lead any country to ruin at the end.

Home - Ground :

It is quite natural that a person feels more confident and assuring in the field, which is familiar to him and in which he can have a say. If it is a field quite strange to him, he becomes a silent spectator or listen to what happens or transpires in the surroundings. To illustrate this point, we have a familiar day to day incident. It is common sight to see people going for a walk, accompained by their pet dog. When the pet dog happens to come across a formidable new dog, it remains very close to its master and follows him without barking at the new dog. This is because the dog is traversing new ground, with fear of being overpowered. But when the dog is well within the master's residential campus, the dog will start barking at whatever and whosoever attempts to enter the campus. The dog is not worried about the fact whether it is equal to the task of opposing the intruding animal or otherwise but mustering all the courage because of its anchorage in the homeground, it begins to bark at any intruder. The dog is simply not worried about the effectiveness or otherwise. Similarly, a person feels like butting himself in, during conversation, if a familiar topic is being discussed. (This is one of the many illustrations given by Sir. William Bragg, the Nobel Laureate in Physics, during his lecture on "The Nature of the Living Matter" in Presidency College, Madras on 16th December 1963.)

The trained pet :

Of the easily domesticated birds and aninials, the parrot is unique in that it can be trained to speak the different languages nicely. Once trained to speak, the parrots will easily reproduce the same sentences over and over again any number of times. Several instances are there when the parrots were used to solve certain intricate problems.

It was during the reign of Lord Krishna Devaraya that, of the Sixty-three nayanmar (devotees of Lord Shiva) idols made of Pancha-loha (five metals, including gold), installed in the local Shiva temple two were stolen by the avaricious priest of the temple. The priest thought that nobody would be able to find out the theft because the number was fairly big. It so happened that one of the regular visitor to that temple, a vedic scholar by himself, noticed that two metallic idols were missing. He could easily surmise that the priest alone could have snatched them away. But he did not want to meet Lord Krishna-Devaraya since he was not easily-accessible. So he planned to bring the priest as well as the goldsmith who was an accomplice in the shady transaction, to book, by a tricky method. He trained his pet parrot for the purpose. He wore a turban, like Lord Krishna Devaraya, seated himself before the parrot and trained the parrot to speak the following words:

" Oh! Krishna Raya! Krishna Raya!
There were Sixty-three metallic idols in the temple before,
Now, there are only Sixtyone to be seen;
The temple priest, who has stolen the idols
And the goldsmith, who turned the same into money,
Both remain as free citizens still, unpunished."

The moment the scholar sat before the parrot, wearing his turban, the parrot will repeat all the above lines.

On one Friday evening, Krishna Devaraya was going on a procession with all paraphernalia. Just when he was about to cross the scholar's house, the scholar with his turban on, sat with his parrot on his house-top, Krishna Devaraya seated on the elephant was on the same level as the house-top. Just when Krishna Devaraya came near his house, the scholar sat in front of the parrot.

The parrot started repeating the usual lines quite audibly. Krishna Devaraya was attracted towards the parrot and he listened to its words intently. He immediately ordered his servants to book the parrot-owner and the parrot and bring them to his Court. Thereupon, the scholar revealed the nasty game played by the temple priest and

the goldsmith. Krishna Devaraya summoned the priest and the goldsmith. Both of them pleaded quity of the charge and were punished equitably.

There is another instance, in which the parrot could not come to the rescue of its trainer cum owner. There was one court poet Banaveera in a palace, who was fairly well versed in all scriptures. There used to be an annual literary contest in which poets from all over the province used to participate on invitation. This Banaveera used to triumph over the rest for several years in succession. The secret of his triumph was this. He trained a parrot to speak the following lines,

> "Oh ! Ye ! poets ! How dare you enter this conest ?
>
> Don't you all know that Banaveera is a literary lion, who is unparallelled for his erudition. Better retreat and save your prestige."

These lines, the parrot will repeat before the intending contestants every year and hearing these lines of the parrot, the other poets used to think; "The Court-poet's parrot itself speaks so intelligently, then the poet must be extraordinarily learned. There is no point in our competing against him". So thinking, all prospective contestants used to back out and in the absence of a contest, the Court-poet used to emerge out as winner of the contest. This was happening for years but in a particular year, an young brahmin knew that the secret of the poet's success lay with the parrot and he decided to enter the Court-hall with two well-versed poets on the day of the contest. When he approached the Court-hall, the parrot did its usual routine of repeating the lines. The Brahmin had taken a cat with him. He just exhibited the cat before the parrot. The cat being a nightmare for parrot, disturbed the composure of the parrot. The parrot began to squeal out in fear. All the lines, which it used to repeat were forfotten. Several poets look part in that contest and the Court-poet was beat black and blue. Thus the trained parrot, in spite of the precious training, could not come to the rescue of its master.

An astute beggar :

One fine morning, a beggar approached a rich person in a city locality and fervently appealed to him for charity but in vain. The beggar

sat right in front of the rich man's bungalow and started weeping aloud. The rich man asked him, why he wept like that. The beggar replied, "Lord Shiva is dead; Therefore I am weeping." The rich man asked him, "What rot are you talking?" The beggar added, "Sure, Sir, you may be knowing that it was Lord Shiva, who drank the great poison, Halahala, which came out of churning the milky ocean by the Devas and Asuras, using the mountain, Manthara as the Churning rod. So, Shiva died due to poisoning. The cresent Moon lodged in his hair-mattresses, has gone to the skies; his snakes have gone to occupy the snake-hills; the Ganges locked up in his crest, has come down to the earth and is flowing as a river; the human skulls that Shiva was wearing, have gone to the graveyard; his rhythmic cosmic dance has taken refuge in danseuses; his third eye has gone to the wicked people. Only two qualities were left of him, the quality of giving charity and the quality of accepting charity. Now the first quality has taken refuge in you and the second in me. Now that I have come, please give charity to me. "Hearing these ingenious words of the beggar, the rich man commended his cleverness and gave some charity.

Faith can work wonders !

Once there was a big prayer congregation at London and many people were going towards the meeting place. London was suffering from an acute dearth of rain for a long time and this prayer was arranged to pray to the Gods for heavy rain. A small boy with an umbrella spread over, was heading towards the meeting place. Just then an elderly person asked the boy, "My dear boy! There is no rain now. Why are you keeping an umbrella spread over your head? The boy replied," Sir, Don't you know that there is going to be a meeting, to pray for rains. Soon after the prayers rain will come and I can use the umbrella then." The elderly person was very much impressed with the fact that the boy had so much faith in the efficacy of prayer, whereas others did not have any faith in what they did. Unless faith in one's own convictions is there, nothing substantial can be achieved.

Devotion Excelsior !

Sri Krishna Chaitanya, a reputed devotee of Lord Krishna from Bengal made a trip to Srirangam a famous religious centre in the South.

He heard clairvoyance one night and the Lord instructed him to find out one, Rama by name, greatest of his devotees, who will be in the precints of the Srirangam Temple with a scar on his right forehead and long thick eye-brows. Sri Chaitanya was coming in a procession along the four streets of the town, his attention being fixed on finding such a person. On enquiry, he came to know that such a person was there in the temple premises but he was a bit mad. Sri Chaitanya went in search of him and having found him, prostrated and told him that he would like to hear his learned exposition of Bhagavad Gita from his mouth. Soon a big crowd gathered around Raman; the "lunatic", waiting for him to respond to their request. The crowd waited for long but Raman would'nt speak. After sometime he told that his father had presented him a book of "Bhagavad Geetha" and told him that it is the quintessence of Hindu Dharma. He added, "Daily I would open the book and see the figure of Lord Krishna riping Arjuna's chariot and at the very sight of that picture, tears used to roll down from my eyes; the book will disappear from my eye sight; I will see two armies, one of Pandavas and another of Kauravas on the Kurukshetra field and the Lord doing Geethopadesa to Arjuna." Nothing elso I know of Bhagavad Geetha." On hearing this, Sri. Chaitanya repeatedly prostrated before him and came away, praising his unsullied sublime devotion.

The Newest Religion (A Short Story)

T. S. Ananthu

It happened before the Immigration Act came into force in Britain. Jojo was one of those very many Africans who had heard all about the "Paradise on Earth" that exists in London. "All the women are white and fair. In fact, even the beggars in the streets are white!", he was told. And so he collected all the cash that he could, and somehow managed to land in London. However, he soon discovered that the only heavenly felicity that this Paradise could offer him was disappointment, and he soon settled as "Cleaner and Assistant" to one Mr. James Whitley.

Mr. James Whitley was in overall charge of the machines that supplied electricity to a small suburb in London. He held a peculiar position — he was Engineer, Supervisor, Foreman, Attender as well as worker — in short, he was "All in All" in his small installation. You may think he hated being over worked. Not at all! In fact he hated to work with his fellow-countrymen, for he hated their way of life. He wasa highly practical man, who believed that machines were the be-all-and end—all of life. He did not believe in anything ideal, including the Ideal Deity, but except of course the Ideal Carnot Cycle.

Therefore, he was glad when he appointed Jojo as his Assistant, for here was a man who would not sit and think of Santa Claus and Jesus Christ, but would devote himself whole-heartedly to cleaning all machinery. And further he liked beating and bullying his helper, and he knew that only a Black could stand that.

Right from the first day he impressed on Jojo the importance of the machines.

"See how much power can be generated merely by cutting lines of flux!" he would lecture to the African, "All these people talk of Gods. But can God ever give you electricity? Nay, Jojo, nay! God

is an artificial creation of those creatures who cannot create anything else." and then suddenly he would notice that some part of the Generator had not been cleaned or not been oiled. The nearest copper wire would come in handy for giving a good speaking to the "nigger".

"How many times have I told you," he would shout over and above the din and bustle of the machines, "that you must take more care of this installation than what you take of images of your stupid Gods?"

Perhaps Mr. Whitley was under the impression that all this would have the effect of making Jojo realize that these machines were more important than any God. He was, in a way, right. Jojo was quite amazed at the tremendous size and power of the machines. He was wonder-struck at the way the pistons moved to and fro, the brushes sparkled and spit blue flashes and the leather band ran shouting over the shaft.

But all this set up some odd currents of thought in Jojo's mind. You see, he did not know anything about poles or fluxes, and was naturally drawn to the conclusion that these machines themselves developed the tremendous power that they generated. All this slowly made him develop a sort of respect for the machines, particularly the huge, big Generator, which to him looked much more powerful and majestic than the other smaller ones. Soon he began to imagine that the Generator was a God — because he thought it was the most powerful thing in the world — with the other smaller machines as His Nobles and Knights. After all, this God was greater and more energetic and powerful than even the great images of Buddha and Christ that he had seen — and yet not motionless, but living !

The Generator became so fascinating to him that he would take great pleasure in cleaning and polishing it. He felt a mysterious sense of service in doing this. Soon the day came when his dim feelings grew more distinct, and took shape in acts. He would go every morning and evening and kneel before the Generator in deep meditation.

His devotion towards the Generator served another purpose—that of giving him mental consolation whenever he was bullied or tortured

by Whitley. "Thou seest, my Lord, how my master tortures me !" he would kneel and say, and the angry whirr of the machinery seemed to answer, "Yes, that rascal ! He shall be punished."

Once when Whitley entered the installation, Jojo imagined that a diffierent note of sounds came from the Generator. They seemed like the words "Be careful, you rascal !" in his native tongue.

Another time when Whitley was doing his routine course of inspections, he inadvertently touched a live wire, and got a rather severe shock. Jojo from behind the Generator saw him jump off and let out a curse.

"He is warned," Jojo said to himself, and felt considerably pleased with his Lord.

My pen is not of the type that can describe the various currents and under currents that circulated in the African's mind. But this much I can say—when the idea of making Whitley a sacrifice to the Lord Generator first erupted in his mind, he was filled with a strange tumult of exultant emotion.

That night the two men were, as usual, alone at the installation site. Jojo had to wait for nearly three hours near the Generator in order to get a good opportunity to carry out his plans. But once, when walking quite close to the big machine, Whitley felt a tremendous impact on his side, and before he knew what was happening, he was well in the grip of the armature teeth.

Jojo, extremely pleased that the Lord had accepted his offering so easily, knelt before the Generator and was deeply absorbed in expressing his gratitude to Him. It was in this state that he was found by the Chief Engineer of the London Electricity Board, who came hurrying to the installation the moment he was informed that electricity had failed in the extremely reliable Whitley's suburb.The sight of what had once been Whitley-a huge crumpled mass hanging from the front of the Generator was enough to tell him the reason for the failure. It was only natural for him to imagine that Jojo was praying so that his master's soul should rest in peace. Therefore it was not in the least difficult for Jojo to draw the Chief Engineer to the obvious conclusion of suicide.

In fact, I think no other murderer has met with as little suspicion as Jojo encountered. The dismembered remains of Whitley were removed after an expert had given a verdict of suicide, and nobody–not even the few reporters who had gathered suspected Jojo or anybody–else of any possible hand in his death.

"Have I not served my Lord?" whispered Jojo to the Generator as soon as the place hed been cleared of all, except the Chief Engineer, who had temporarily taken over Whitley's work. The note of the Generator rang out full and clear, and Jojo felt. He was feeling very pleased. As he looked at the big whirling machine the strange fascination of it that had been a little in abeyance since Whitley's death resumed its sway. Never had Jojo seen a man killed so swiftly and pitilessly. The big machine had slain its victim without wavering a second from its steady beating. It was indeed a mighty God!

Suddenly the beat of the Lord seemed to become louder. Was the Almighty still hungry? His servant was ready.

Jojo looked round. The Chief Engineer was the only human being nearby. He moved stealthily towards him, and, gripping the poor unsuspecting fellow by his waist, swung his body towards the machine. But this time the force with which he flung his victim towards the machine wasn't quite sufficient. The Chief Engineer fell a few inches short of the machine. Dazed, he was just awaiting the final kick which would send him into the teeth of the armature, when the welcome sound of footsteps sounded on the floor. The Inspector of Police had come to get the Chief Engineer's signature on a document pertaining to Whitley's death.

The next moment Jojo left his prospective victim· and darted towards the Generator. The Inspector stood staring as Jojo caught the naked terminals in his hand, gave one violet convulsion, and then hung motionless from the machine, his face violently contorted.

It took the Chief Engineer full five minutes to take his eyes off the dead African.

"Poor Whitley! I see now," he said at the end of that period. And then for the next two minutes, the Inspector and he stared at each other, neither uttering a single word.

It was only when a messenger came running in and announced the failure of electricity in the suburb that the Chief Engineer woke up to his duty. He went to the corner and turned off a switch upon which the singed black body fell forward on its face. Then he turned on the switch again. The core of the dynamo once more roared out loud and clear, and suburb was the no longer in darkness.

So ended prematurely, the worship of the Lord Generator, the newest as well as the most short lived of all religions. But yet it can boast of a Martyrdom and a Human Sacrifice.

THREE POEMS

E. S. Bhagiratha Rao

The Mystery

Who, in this hour,
Has filled a
Sense of Restraint,

Who, in all emotion,
Has kept a
Constant vigil,

Who, in all madness,
Has managed a
Lucid interval,

Who, in the name of Heaven,
Made Life for living
A labyrinthine blend

Must he be He
Or superman
Must he be yet a Mystery ?

The Night

The Night that slumbers is never silent,
Never at rest, and never at peace;
The Night is dark, dear and dreadful
For those whose true colours at night release.

The Night is thrilling for lovers to love.
The Night is dear for splendid moonlight,
A time unforgettable for innocent men
Who do not plunder its dark delight.

The Night is so tragic for lovers apart;
But the villainy you witness is not of the Night,
It is of the men with crooked minds
What wreck the peace and bring the plight.

The Sinner

Just this time,
and never again—
Not before the
vow is broken :
Oh, let it, let it,—
the pleasure of pain,
Yes-Oh, never,
but in vain.
I here confess,
at your clemency,
Sins not my heart,
knowingly.
I strive to reach,
the endless shore,
Alas, the tide impedes,
once more.

Superstition

M. Vikram Rao

Recently I overheard a European remark loftily to his compatriot, as they were walking down a New Delhi street, "These Indians! They are such a terribly superstitious lot; positively disgusting." Even as he said this, he studiously avoided walking under a ladder propped up against a lamp-post, making a wide detour in so doing. My first thought on seeing this was the oft quoted adage; "People in glass houses should not throw stones at others." Possibly his action was inadvertent, and merely from force of habit; but it just goes to show how often supersitition guides our actions, very often, as in this case, belying our very words. It is nothing unusual to hear a man deriding others for what appears strange to him, and in blissful ignorance of his own foibles and superstitions.

To identify superstition with false belief or practice would be misleading. For in the first place, the field in which it is generally found, the magics- religious, is the very one in which the standard of truth and false hood is most subjective and fluctuating; in the second, a custom or belief, religious or otherwise, which is false may nevertheless be accepted at some times and places by men of enlightened intellect and reason. We describe a man as supersititious, who in a modern community, seriously believes that the breaking of a mirror will bring him bad luck; but the original holders of that or similar beliefs were perfectly reasonable in their view, according to their lights. Supposing that a shadow or reflection was in some sort a part of the soul, they naturally concluded that to break it, was to injure the soul or life itself. They had merely been misled by a false inference. It is interesting to speculate why, following the same reasoning, diving into a pond was not considered unlucky, for in effect, it meant the same thing.

In England, a child will normally never be initiated to school life on a Thursday. The reason for this can possibly be traced to the Bible, since it was on a Thursday that King Herod ordered the extermi-

nation of all the babies in the country, in an effort to kill the prophet Moses. The superstitious dread still pervades the minds of other wise level-headed people of the jet age, that the day would be an unlucky one. It is also another superstitious belief, that the appearance of a comet protends the death of a prince or the precipitation of a bloody war. Then, of course, after a war has begun, there is always somebody to say that a comet had been observed some time before.

Many are the superstitious beliefs that have originated from mythology. In rural areas especially, superstition is more rampant. Here the more simple minded folk believe implicitly in all that has been handed down to them from generations, and nothing will convince them of the futility of their beliefs; and they will quote various instances from what they consider as history, for, we like the Greeks, have developed a mythology that is so invivisibly mixed up with history that it is not possible to distinguish fact from fiction. Superstition and religious belief have a very thin line of demarcation. For example it is a religious belief to have a particular season and day for marriages, whereas it is a superstitious belief to embark on a journey on a 'good' day. But the two are so closely allied that in some cases you are in doubt as to which it is. For example, I wonder in which category falls the belief in Orthodox South Indian families of not employing as a cook, a man whose ancestry produced a barber! I have often heard it said that orthodoxy breeds supersitition. A statement of this sort has to be viewed with caution, for though undoubtedly orthodoxy is more or less synonymous with strict adherence to various beliefs, more often than not these are religious rather than superstitious. There is a little known belief, which dictates that when a member of the family sets off on a journey, the utenisls used by him in his last meal before leaving shall be washed first, before those used by others I cannot conceive of any religious motive behind this. I say this with the full realisation that I am laying myself open to the risk of a deluge of irate and possibly convincing arguments; though it is more likely that the original reason for this belief has been lost in ancestry.

There are some people who are inherently superstitious as is proved by the following curious incident. We were walking to the examination hall for our Annual examination. The morning's paper (part one

of the afternoon one) had been rather a debacle; so I was not surprised to see a visibly disconcerted expression on my friend's face. But the reason it appeared, was not the paper, but the fact that a mongoose had run across our path a short while ago. He was troubled because he didn't know what omen it was; of the fact that it protended one either good or evil, he had no doubt. Another instance was in our first year, when on the way to Highways Workshop for our carpentry Annual examination, we chanced to see legs protruding from the foliage of a tree in front of A. C. College. On this occasion, my companion refused to look in that direction for fear of repercussions in the examination. The fact that I all but broke my work piece that day goes to show nothing, for I did the same in the terminal examination too'.

One of the commonest "imported" beliefs is that of saying 'touch wood' and suiting words by action, a gesture purporting to prevent the distasteful event just mentioned by the speaker from befalling him.

Another popular form of westerns superstition is the keeping of good-luck charms and mascots. The latter invade all fields from battle to foot ball. They range from goats to goosewings (A stately bearded goat marching at the head of a regiment, or a pungnacious bulldog on the deck of a destroyer, is no uncommon sight) Mascots are very common in the realm of sports and it makes faciating reading to know these 'little-known facts about well known people'. But very often these facts turn out to be artifices and tricks designed to intrigue and interest the public and are publicity stunts in essentials.

Superstition is often a function of the atmosphere. For example one who generally scoffs at the existence of ghosts and the like in broad day light is likely to revise his opinions radically and start nervously at every shadow or noise, if left alone in a lonely building at night; the advent of a storm of course would add colour to the proceedings. Belief in ghosts falls well into the realm of superstition, for it fits in very well with the dictionary meaning - "credulity regarding the supernatural'. It is the first word of the definition that is striking, for it is the credulous and gullible section of the modern world which fall a prey to entirely new beliefs based upon modern conditions and having no near parallel in savage or ancient custom.

It would, I think, be propitious to stop the essay at this stage for it is coming dangerously close to thirteen hundred words. Not that I'm superstitious, but just to keep on the safe side !

ANNUAL REPORTS

SPECIAL ALBUM

The Publications Committee is happy to introduce in this issue, a new feature giving comprehensive portraits of all outgoing students. It is hoped that this portrait gallery will become a permanent feature.

—Editor

CIVIL ENGINEERING

Permanent Address

M. R. Sampath Kumaran,
191, Cook's Road, Oorgaum, Kolar Gold Fields (Mysore)
Very secretive.

V. G. Joshi,
'Kripa-Drusthi,' Tilak Nagar, Bhandara, (Maharastra)
Likes instrumental music.

P. K. Prabhakaran,
c/o Shri M. K. Poyyamani, M.SC., LL.B., 40, Chinnakadai Street, Tiruchirapalli-2.
Please contact for other information.

N. K. Paretkar,
c/o Shri K. P. Paretkar, Chowri's Building, Tulsibagh Road, Mahal, Nagpur-2.
Reads classics, Likes Music: Classical ?

G. Viswanathan, No. 10, Dr. Nair Road, T'Nagar, Madras-17.
Likes Photography: Portraits, anyone ?

K. Ramachandra,
c/o Shri K. Y. Poojari, B.A.,B.L., Advocate,
Sanyasigudde, Mangalore-3.
Plays Hockey. Don't cross sticks with him.

P. Venkata Seshiah,
c/o Shri P. Ramakrishniah, Kasepet,
Venkatagiri Town, (Nellore Dist., A.P.)
Writes short stories Anyone seen them?

Govind Das Daga,
c/o Shri G. D. Daga,
Daga Rice Mills. Arang, Raipur (M.P.)
Writes Letters. Please write to him.

K. K. Dutt,
c/o Shri H. L. Dutt, Twiss House, Mayo College, Ajmer.
Hikes, rows and reads : no comment !

V. Koteeswaran,
c/o M. Venkataraman,
6, II Main Road, United India Colony, Madras-24.
Prize-writer. Another Nevil Shute ?

A. K. Mehrotra,
c/o Shri S. P. Mehrotra, Principal,
Katicharan Inter-College, Chowk, Lucknow-3 (U.P.)
Actor & Sportsman.

M. Madhava Sampigethaya,
c/o M. G. R. Sampigethaya, M.B.,B.S.,
Karkala, P.O., (South Kanara, Mysore)
Goes on picnics and corresponds. Jolly good time ?

M. R. SAMPATH KUMARAN

V. G. JOSHI

P. K. PRABHAKARAN

N. K. PARETKAR

G. VISWANATHAN

K RAMACHANDRA

P. VENKATA SESHAIAH

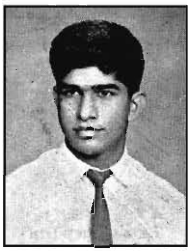
GOVIND DAS DAGA

K. K. DUTT

V. KOTEESWARAN

A. K. MEHROTRA

M. MADHAVA SAMPIGETHAYA



K. L. ASANARE

CHIMANLAL CHAWDA

C. EASWARAN

GIRIS CHANDRADAS

S. GOWRINATHAN

GUDURI E. C. VIDYA SAGAR

JACOB DOMINIC

N. LAL

MANMOHAN LAL

NANDAKUMARA VASUDEVA RAO

V. L. PRASAD

PRADEEP CHANDRA GUPTA

ELECTRICAL ENGINEERING

K. L. Asanare.
C/o Dr. L. A. Asanare, Bhaji Bazaar. Amravati (Maharastra)
Gymnast, plays Kabadi; Stay away every one!

Chimanlal Chawda.
C/o Shri Monji virji chowda kelker garden, Neherpara,Raipur (MP)
Hockey, Music and Drama. Is it Cricket?

C. Easwaran, Main Road, Annur P. O. (Coimbatore Dist)
Sports: you know the usual games.

Giris Chandra Das,
C/o Shri P. C. Das Shillnng P. O. Bishnpur, (Assam)
Sings folk-songs. Ready, folks ?

S. Gowrinathan.
293, Gangadhareswar koil St, Vepery Madras-7.
Plays Hockey and likes to act.

Guduri Vidya Sagar.
Ganapavaram P. O. Bapatla, (Guntur Dist. A. P.)
Unknown Quantity.

Jacob Dominic
C/o Shri N. D. Chacko, Puthulkara Rubber block, Kariara, Punalur (Kerala) The Athlete, The Sportsman, see back numbers

N. Lal, Simra, P. O. Sarasawa, Sharahanpur Dist. (U. P.)
Please write for other information.

Man Mohan Lal. B. 75, Kalkaji, New Delhi—19.
Likes to make friends, Game, anybody ?

Nanda kumara Vasudeva Rao,
C/o Mrs. Vasudeva Pai 12/1, Mangesh Street, T.Nagar, Madras-17.
Collects Coins: Hide your wallets !

V. L. Prasad,
C/o Prof. V. V. L. Rao, Principal, Govt. Engineering College, Anantapur (A. P.)
Painting & Photography. See elsewhere in this issue.

Pradeep Chandra Gupta.
C/o Shri K. C. Gupta, 18, Barakhamba lane, New Delhi— 1
Cartoonist, Makes Electronic gadgets: Very fnuny!

ELECTRICAL ENGINEERING

Purna Chandra Majhee,
Baripada P.O. Mayurbhanj Dist. (Orissa)
Electronic Wizard.

P. V. Radhakrishna,
c/o Shri P. S. R. Koteswara Rao,
I.L.T.D. Co. Ltd., Tangutur P.O. (Guntur Dist)
Likes tobacco ?

R. Ramachandran,
18, Sardar Patel Colony, Ahmedabad-14. (Gujarat)
Write for details

C. S. Rajeswara Rao,
c/o Dr. C. Suryanarayana Murti, Governorpet, Vijayawada-2.
Call on him during summer.

G. N. Sarma,
7, Ist Street, Tirumurtinagar, Nungambakam, Madras-34.
Ranking Student.

Srinivas Nageshwar,
c/o Shri A. S. Nageswaran, M.A. Senior Dy. Accountant General,
'Purna Prasad', Race course Road, Bangalore.
Quiz, Debates, Photography and—ask
R. Venkateswaran about him, or Call at the Gymkhana office.

P. M. V. Subrahmaniam,
c/o Prof P. V. V. S. Sastry M.Sc., Professor of Electronics,
M I.T., Chromepet, Madras.
What's he doing at M.I.T ?

S. D. Tank,
c/o Shri D. U. Tank, Mana P.O. (Akola Dist. Maharastra)
Plays Kabadi; He looks it.

P. V. Venkateswara Rao,
21/281, Ramanaidupet, Masulipatam (A.P.)
Please contact for information and mangoes.

R. Venkateswaran,
c/o Shri V. Ramaswami Iyer, Dy. Controller of Estate duty,
P. 13, Chowringee Square, Calcutta-1.
Top-pop-Singer, Quizwizard, Ace.—debater, Multi-linguist,
ask S. Nageswar about him.

PURNA CHANDRA MAJHEE

P. V. RADHAKRISHNA

R. RAMACHANDRAN

C. S. RAJESWARA RAO

G. N. SARMA

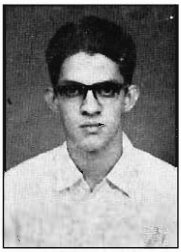
SRINIVAS NAGESHWAR

P. M. V. SUBRAHMANIAM

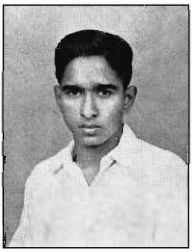
S. D. TANK

P. V. VENKATESWARA RAO

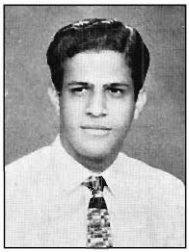
R. VENKATESWARAN



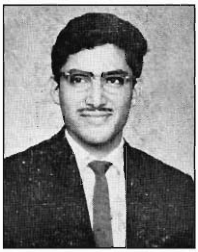
R. DEVANATHAN



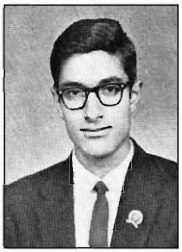
K. V. SRINIVASAN



P. PREMANANDA PRABHU



MOHAN KRISHAN MUJU



R. GANESH

G. LAKSHMINARASIMHAM

V. AMUDACHARI

D. SATYANARAYANA RAO

S. SRINIVASAN

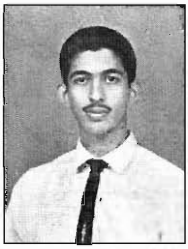
A. MALLESWARA RAO

S. R. THANGAVELU

M. V. NARAYANAN

ANIL KUMAR MITHAL

GYANENDRANATH



G. MARINARAYANAN

C. G. KRISHNADAS NAIR

B LAKSHMINARAYANAN

R NATARAJAN

A. C. RAGHURAM

A. T. SANTHANAM

RAMANAND JHA

TEJINDER PAUL SINGH

T. VARADARAJAN

L. V. PATTABHIRAMAN

P. ANANDA BHAT

P. S. KRISHNAMURTHY

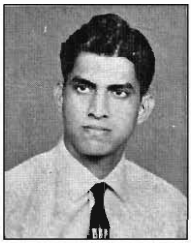
MANISH CHANDRA UTTAM

MOOLIYIL BHASKARAN

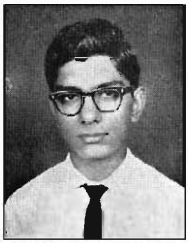
K. NEELAKANTAN

S. RAMKUMAR

A. R. SANGAMESWARAN



B. SUDHAKER BALIGA



VIJAY KRISHAN BATRA

C. P. VIJAYAN

CHEMICAL ENGINEERING

P. Ananda Bhat,
c/o Dr. P. G. Bhat, Karkal, South Kanara, Mysore State.
Current Student secretary, Institute Gymkhana, plays most games and collects Stamps.

P. S. Krishnamoorti,
c/o Sri G. Sundaram, 15, Jeremiah Road, Madras-7.
First rank in III & IV years, Good luck to him in the Final year!

Manish Chandra Uttam,
227/4, Babupurwa, Kanpur (U.P.)
Collects books. What sort ?

Mooliyil Bhaskaran,
'Remalayam, Valla Valap, Cannanore (Kerala)
Ace foot-baller and Pole-Vaulter, watches birds; no wonder he soars!

K. Neelakantan.
C/o Shri N. Krishnan, D1/100 Chanakyapuri, New Delhi-21.
Likes to sketch, other information sketchy !

S. Ramkumar,
17, Venkatanarayana Road, T. Nagar. Madras-17.
Institute Cricketer, off the stump, collects stamps!

A. R. Sangameswaran, 3/44 Sion west, Bombay—22.
Chased shadows in the Campus and partcipated in a Shadow play

B. Sudhaker Baliga,
C/o Sri B. R. G. Baliga, Cloth Merchant, Car Street. Mangalore-1.
Tugs ropes, Collects stamps, Makes pen friends.

Vijay Krishan Batra,
C/o Shri H. N. Batra C-102, New Rajinder Nagar, New Delhi-5.
Please contact for other information.

C. P, Vijayan, Cherubala, Pathayapura, Chittur, Cochin (Kerala)
Art Collector, please exihibit.

D. S. Sihota

MECHANICAL ENGINEERING BRANCH

Jagadis Chandra Kalyan,
C/o Shri K. S. Kalyan. 90, Lower Bazaar, Simla-1.
Right ! ice skating, and an actor to boot

S. S. Randhava. 86, Man Nagar, New Delhi—11.
Popular columnist for 'Compastimes', Hit the headlines as winner of Sandeman Rowing Trophy at the Madras Boat club Regatta; was Gymkhana Secretary. He is an Angler, sharpshooter and collects ahem butterflies !

Vinaya Chandra Varshney. P. O. Wazirganj Budaun Dist. U. P.
Swimming, Table Tennis, Volleyball and Photography.

A. R. Jayaraman.
C/o Shri A. M. Ramachandran. Anayampatty P. O.
Attur Taluk (Salem Dist) He sketches - What ?

Ishwar Chandra. 318-B. D. L. W. Colony, Varanasi.
Kite - flying.

Purshottam Devnani.
C/o Sri Tirathdas Satramdas, 111/33, Garbarjhalla Park, Lucknow
Tut, Tut, Photography. (U. P.)

V. S. Srivastava.
C/o Shri K. P. Shrivastava, Advocate, Bank Road,Gorakhpur(U.P)
Horticulture.

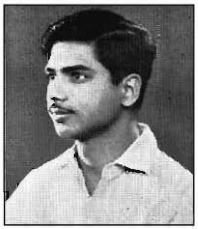
R. Seshadri Reddy.
C/o R. Virupaksha Reddy, Khairuppala P. O.
(Via Kurnool. A. P.) Angler. Is there water in Kurnool ?

D. D. Samuel C/o Shri J. G. Edwin,
Sarah Tucker Compound, Palayamkottai, Tirunelveli—2.
Wild thinker. Beware !

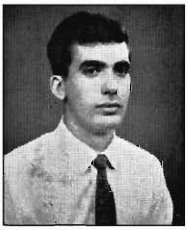
Mahesh Kumar Suri,
B. 110, Double Storey, Rameshnagar, New Delhi—15.
Don't quote, but he collects Quotations.

H. K. Subramanya Rao.
C/o H. K. Gopalakrishna Rao, B.A,B.L, Advocate, Karkala
(South Kanara) Mysore. Athletic Photographer.

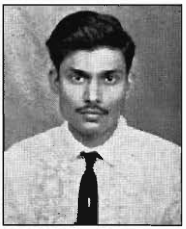
S. Gopalakrishnan.
66, Perumalkoil street, Saidapet, Madras—15.
Student of Rank, Likes to fly, Piloted the Gymkhana as secretarry, and landed the Table Tennis trophy many times.



JAGADIS CHANDRA KALYAN



S. S. RANDHAVA



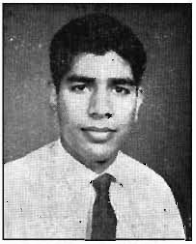
VINAYA CHANDRA VARSHNEY

A. R. JAYARAMAN

ISHWAR CHANDRA

PURUSHOTTAM DEVNANI

V. N. SRIVASTAVA



R. SESHADRI REDDY

D. D. SAMUEL

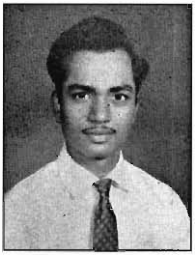
MAHESH KUMAR SURI

H. K. SUBRAMANYA RAO

S. GOPALAKRISHNAN

SALIM. K. KAZI

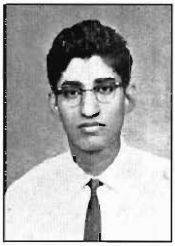
R. MAHADEVAN



P. D. PRABHAKARAN

J. VENKATESWARALU

B. S. SUDHIR CHANDRA



C. T. KUMARAPPAN

MECHANICAL ENGINEERING BRANCH

Salim K. Kazi,
17/174, Central Govt. Quarters, Ghatkopar, Bombay-77.
Humorist, Read him elsewhere in this issue.

R. Mahadevan,
West Street, Sathanur, via Narasingapet.
No information.

P. D. Prabhakaran,
340, Gali Street, Tirupathi P.O. (A.P.)
Painting with a wide brush.

J. Venkateswarlu, (Metallurgy)
Eddanapudi P.O. Chilakaluripet, (Guntur, A.P.)
Yes, Photography.

B. S. Sudhir Chandra, (Civil Engg.)
'Manonidhi', Vanivilas Road, Basavangudi, Bangalore-4.
Sports, photography and letter-writing. No Philosophy?

C. T. Kumarappan,
c/o Shri L.CT. Sp. C.T. Chidambaram Chettiar,
Kandanur P.O. (Ramnad Dist.)
Plays Tennikoit, watch out!

P. Mohan, (Civil Engg.)
c/o Shri K. P. Rao,
18, Subba Rao Avenue, Nungambakam, Madras-34.
Observes nature, writes prize articles, Camera shy, Shuns publicity.

B. Gopalakrishnan
Sarosh Talukdar
A. R. Jayaraman
M. V. Krishnamurti
} No Information

DEPARTMENT OF APPLIED MECHANICS

The academic session started from June 1963 and along with the usual courses handled by this department, a special course of lectures on Machine Tool Vibrations was given to V. B. Tech., students. This subject was handled by Dr. B. V. A. Rao who joined the department from I. I. T., Bombay. The department is also giving courses on Elasticity, Theoretical Hydrodynamics, Mechanism, Lubrication and Vibrations for the M. Tech., courses started this year.

In August 1963, Dr. D. V. Reddy went on leave for a year as Asst Professor in Civil Engineering at the University of Illinois. Mr. S. Venketesan joined the department in October 1963. A special feature in the activities of the Department is a series of seminars given by the departmental staff on various topics every fortnight. One seminar was started with the lecture by Mr. N. C. Swamy on "BOUNDARY LAYER STABILITY".This was followed by Dr.B. V. A. Rao who gave a talk on "A NEW TYPE OF VIBRATIONS DUE TO OIL FILM ELASTICITY." The next lecture was by Mr. R. S. Alwar who spoke on "BEAMS ON ELASTIC FOUNDATION". This was followed by Mr. N. R. Rajappa who discussed the "EXACT SOLUTIONS OF VIBRATIONS PROBLEMS OF ORTHOTROPIC PLATES" and Mr. M. A. Veluswamy who spoke on "INTRODUCTION TO COMPUTING MECHANISMS."

The staff members engaged themselves in research work in addition to their teaching work. The main fields in which research was conducted are STRUCTURES AND FLUID MECHANICS.

Dr. S. R. Valluri joined the department as professor.

DEPARTMENT OF CHEMICAL ENGINEERING
REPORT FOR THE YEAR 1963–64.

Dr. D. Venkateswarlu was promoted to Professor of Chemical Engineering. He was working in the Deparment as Assistant Professor in charge of the Department since 1959.

Dr. T. Gopichand has been promoted to Assistant Professor in Chemical Engineering. He joined the Dept. as a Lecturer in 1959. He proceeded to U.S.A. as a Post Doctoral Fellow in Johns Hopkins University and joined the Department again in September 1963. He did work on 'Combustion Problems' in Johns Hopkins University.

Dr. M. Satyanarayana, Lecturer in the Department, proceeded to the University of California, U.S.A. as a Post Doctoral Fellow and he is working with Prof. James Smith in Davis Camp on 'Phase Equilibrium Problems'.

The following staff members joined the Department during this Academic Year:

1. Shri N. Subramaniam, B.Sc.; B.Sc. (Tech.); M.Sc. (Tech.); A.M.I.I,Ch.E. from Lakshmi Narayan Institute of Technology, Nagpur.

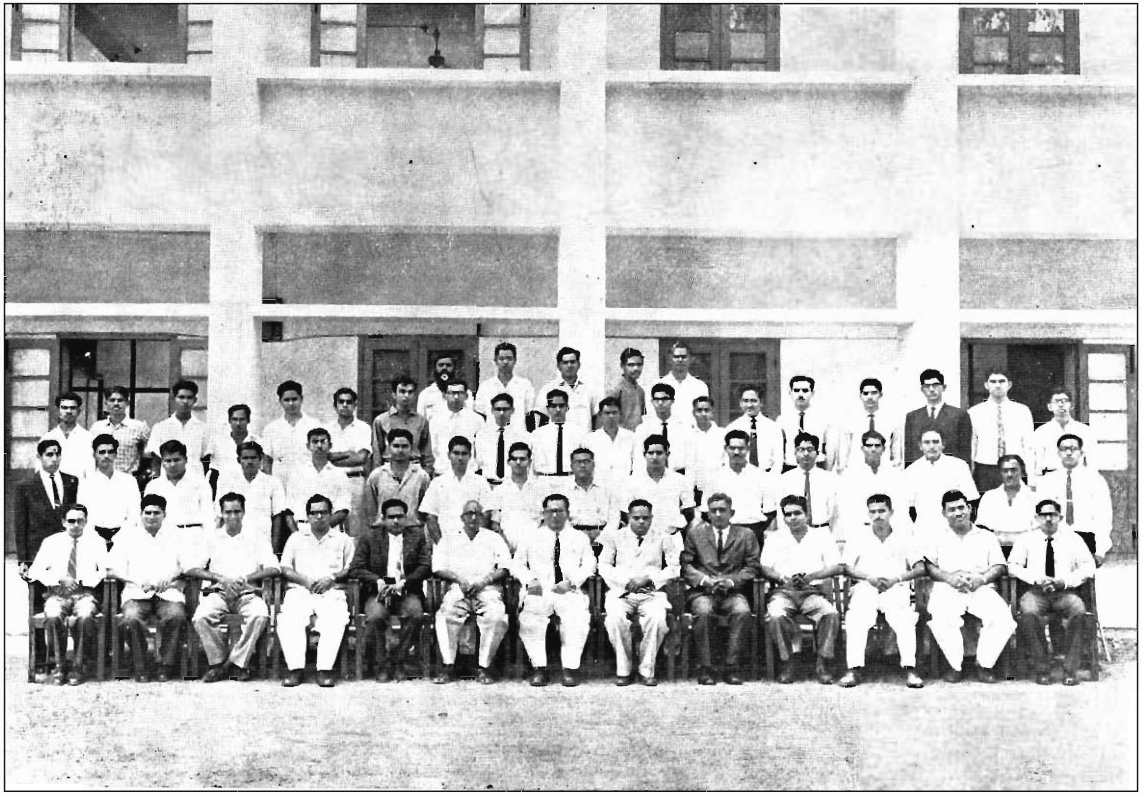
2. Shri K. Ramananda Rao, M.Sc. (Tech.); A.M.I.I.CH.E. from Indian Institute of Science, Bangalore.

3. Shri K. Ramamurthy, B.E., M. Tech. from Indian Institute of Technology, Bombay.

4. Shri R. Subramaniam, B.Sc., B.Sc. (Tech.); M.Sc. (Tech.) from Department of Chemical Technology, Bombay University, Bombay.

Dr. T. S. Govindan, Lecturer and Shri K. J. Janakar, S. T. A. left the Institute.

M. Tech. and III year degree classes were started during this year. Gas and Oil Technology, Heavy Chemicals and Fertilisers and Synthetic



DEPARTMENT OF CHEMICAL ENGINEERING FINAL YEAR BATCH, 1963–64

Sitting (Left to Right) : Shri R. Nagarajan, Dr. K. Subbaraju, Shri M. Ramanujam, Shri N. Subramanyam, Dr. T. Gopichand, Prof. I. R. Rao, Prof. B. Sengupto, (Director), Prof. D. Venkateswaralu (Head of the Department of Chemical Engg.,), Dr. P. B. Rao, Shri Y. B. G. Varma, Shri K. Ramananda Rao, Shri C. Siva prasada Rao, Shri A. Bharadarajan

Standing 1-st Row (Left to Right) : Shri N. Neelakantan, Shri S. V. Subbaraju, Shri E. V. Prabhakaran, Shri A. Sabastian, Shri T. P. Pramanic, Shri K. N. Reddy, Shri D. V. S. Reddy, Shri T. N. Venugopal, Shri B. V. Sreeramalu, Shri R. Vedaraman, Shri K. Jayasimhulu, Shri K. Ramamoorthy, Shri S. Selvaraj, Shri K. Ramamoorthy, Shri G. P. Ramayya Raju, Shri P. Ananda Bhat.

Standing 2-nd Row (Left to Right) : Shri V. Lakshmipati, Shri A. Samuel, Shri A. S. Thangaiah, Shri Arumugam, Shri Y. V. Ramanamoorthy, Shri S. Panchanathan, Shri A. V. Ramani, Shri D. S. Sihota, Shri M. C. Uttam Shri A. R. Sangameswaran, Shri C. Rajendran, Shri C. P. Vijayan Shri B. Sreenivasan, Shri P. S. Krishnamoorthy, Shri S. Ramakumar, Shri M. Bhaskaran, Shri V. K. Batra, Shri B. S. Baliga, Shri M. S. Srinivasan.

Standing 3-rd Row (Left to Right) : Shri K. Chakrapani, Shri M. N. Lakshmanan, Shri V. Loganathan, Shri N. Damodara Raman Nair, Shri S. A. Kanakaraj.

Products Technology are offered as electives for M. Tech. in Chemical Engineering. The latter two electives are offered by the kind cooperation of M/s E. I. D. Parry & Co., M/s India Cements Ltd. and M/s Reichold Chemicals. Shri R. S. Raman of M/s E. I. D. Parry & Co. and Shri S. Ramaswamy of M/s India Cements Ltd. take classes in Heavy Chemicals and Fertilisers. Dr. R. C. Vasisht of M/s Reichold Chemicals takes classes in Synthetic Products Technology. The Department looks forward to greater collaboration with chemical and allied industries in Madras in the coming years.

Prof. H. E. Hoelscher, Unesco Professor at A. C. College of Technology, Madras inaugurated the Chemical Engineering Seminar on 18th August 1963. Shri T. S. Shridhar was elected as the Secretary of the Seminar. Shri Jagmohan Anand and Shri Sudhakar Baliga were elected as the representatives for the IV and V year classes. The students of the M. Tech. class present papers of Chemical Engineering interest at the weekly Seminars. In addition, the following lectures were delivered by distinguished speakers under the auspices of the Chemical Engineering Seminar :

1. 'Salt industry in India' by Shri M. M. Gurunath, Industrial Consultant, Madras.
2. 'Chemical Engineering, Research in Shri Ram Institute, New Delhi by Dr. Sathapathi, Sri Rama Institute of Industrial Research, New Delhi.
3. 'Bromine atom concentration profiles in H_2 - Br_2 flame' by Dr. Gopichand, I. I. T., Madras.
4. 'Nitric acid manufacture' by Shri D. S. Sastry, High Explosives Factory, Poona.
5. 'Potentialities of Chemical Engineering Education' by Shri K. Chandrasekharan, A. C. College of Technology, Madras.
6. 'Higher Scientific and Technical Education in Russia' by Prof. N. V. Subba Rao, Osmania University, Hyderabad.
7. 'Heavy Chemical Industries in Third Five Year Plan' by Shri P. K. Seshan, Technical adviser (Alkalis), Government of India.

8. 'Residence time distribution Functions for Scale-up' by Prof. H.E. Hoelscher, Unesco Professor. A.C. College of Technology, Madras.

9. 'Research Topics at Johns Hopkins University' by Prof. H.E.Hoelscher, Unesco Professor, A. C. College of Technology, Madras.

The following papers are communicated for publication:

1. Hydro desulphurisation of heavy fuel oils.
2. Compaction of solid powders.
3. Critical mass velocities in liquid fluidized beds.

DEPARTMENT OF ELECTRICAL ENGINEERING
BRIEF REPORT FOR 1963.

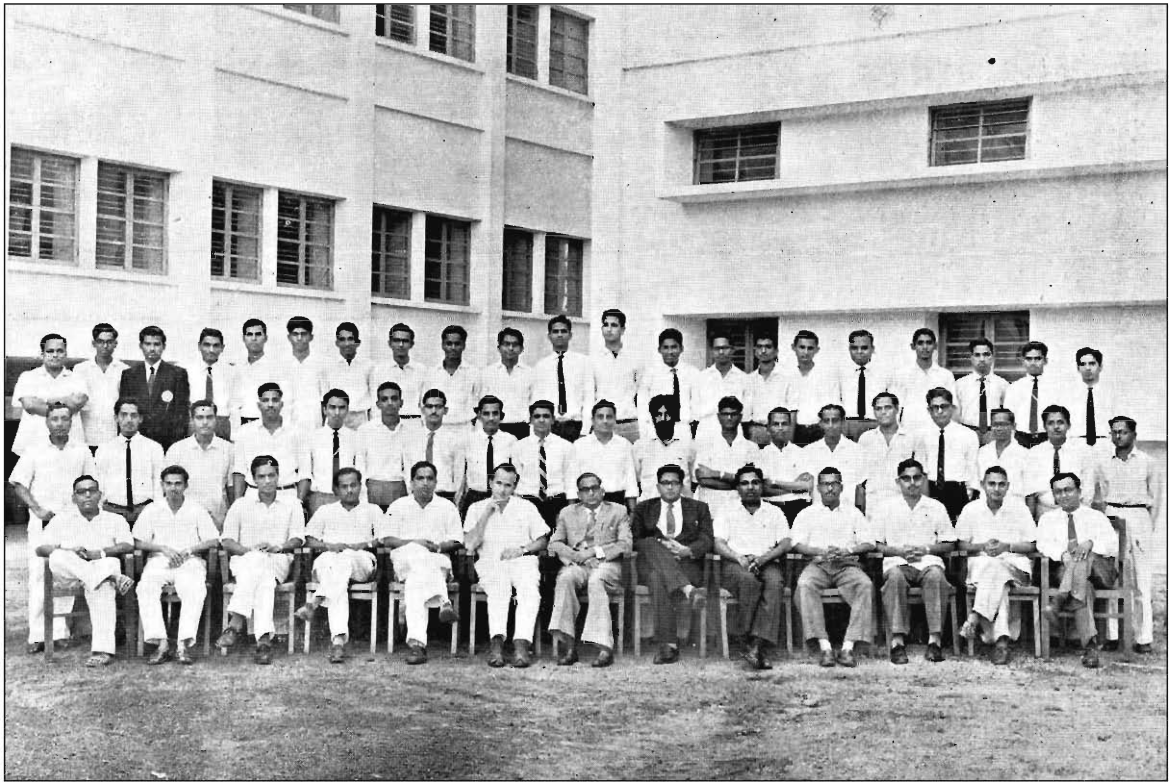
1. Postgraduate courses leading to the M. Tech degree in Electrical Engineering were started. Fields of specialization are: Advanced Electronics, Servomechanisms and Power Systems Engineering. Twelve students have been admitted.

Some progress has been made about Ph. D degree programmes and one student has formally registered.

2. The Electronics Laboratories have been moved to the Central Wing. A large consignment of Electronic Instruments are being commissioned.

Two transistorized Analog Computers were received. These have been commissioned and the final year B. Tech and the M. Tech students are using these Computers.

A major part of the equipment for the Measurements Section has been received and the Laboratories are being set up in their final forms. Multichannel recording equipment and high-current capacity d-c and a-c equipment have been commissioned.



DEPARTMENT OF ELECTRICAL ENGINEERING FINAL YEAR B. TECH 1963 - 64

Sitting (Left to Right) : Sarvashri: B. Ramaswamy, A. L. Abdus Sattar, K. K. Shrivastava, M. K. Achuthan, Dr. M. Venugopal, Dr. S. Seinecke, Dr. P. Venkata Rao, Prof S. Sampath, Dr. K. S. Raman, C. S. N. Raja, T. A. R. Bhat, Dr. V. G. K. Murti, B. B. Bhattacharyya.

Standing (1st row) Left to Right : Sarvashri: S. S. Yegnanarayanan, V. L. Prasad, M. S. R. Sarma, M. Ramamurthi, P. V. Venkateswara Rao, P. Kotiveeriah, G. N. Sharma, Srinivasnageshvar, R. Venkateswaran, Mana-Mohanlal, Kulwant Singh Bhatia, Ramachandra Raja, S. Vardachari, R. Balasubramanyam, R. Rangachari, Dr. U. C. Kothanda Raman, R. Padmanabhan, Dr. M. N. Srikantaswamy, P. S. Kalyanasundarm.

Standing (2nd row) Left to Right : Sarvashri : D. S. Sharma, K. Shankara Rao, C. Easwaran, J. D. Tank, Grish Chandra Das, K. L. Asnare, G. E. C. Vidhyasagar, Chinvanlal Chawda, S. Gowrinathan, Pradeep Chandra Gupta, V. Nandakumar Rao, S. Talukdar, M. Jacob Dominic, Purnachanda Majhee, Ramajogeswara Sarma, V. V. Bapeswara Rao, Nokheylal, Ch. S. Rajeswara Rao, R. Ramachandran, P. V. Radhakrishnan, P. M. V. Subramaniyam.

Oscilloscopes and recorders were received for the Power Systems section and have been commissioned.

3. Prof. M. B. Reid, Guest Professor, College of Engineering, Guindy, inaugurated the Electrical Engineering Chapter of the Association of Scientists and Technologists, on August 8, 1963.

LECTURES.

Date.	Speaker.	Subject.
10-8-1963	Sri K. S. P. Kumar. Purdue University, U. S. A.	"Control Systems."
13-8-1963	Dr. R. Sridhar. Purdue University, U. S. A.	"Optimization Techniques."
3-10-1963 to 5-10-1963	Dr. Mueller Hillebrand, High Voltage Research Institute, Uppsala, Sweden.	"Lightning Phenomena.'
11-12-1963 12-12-1963	Prof. H. D. Huskey, Visiting Professor, I.I.T., Kanpur.	"Computing Machines."
16-12-1963	Dr. S Seinecke, German Expert, I.I.T., Madras.	"Vestigial side-band Transmission Systems in Television."
18-12-1963 19-12-1963	Prof. S. I. Molokovsky Visiting Professor, I.I.T., Bombay.	"Electron Beams."

Film Show : A colour film on Transmission Line erection was shown on 22. 8. 1963.

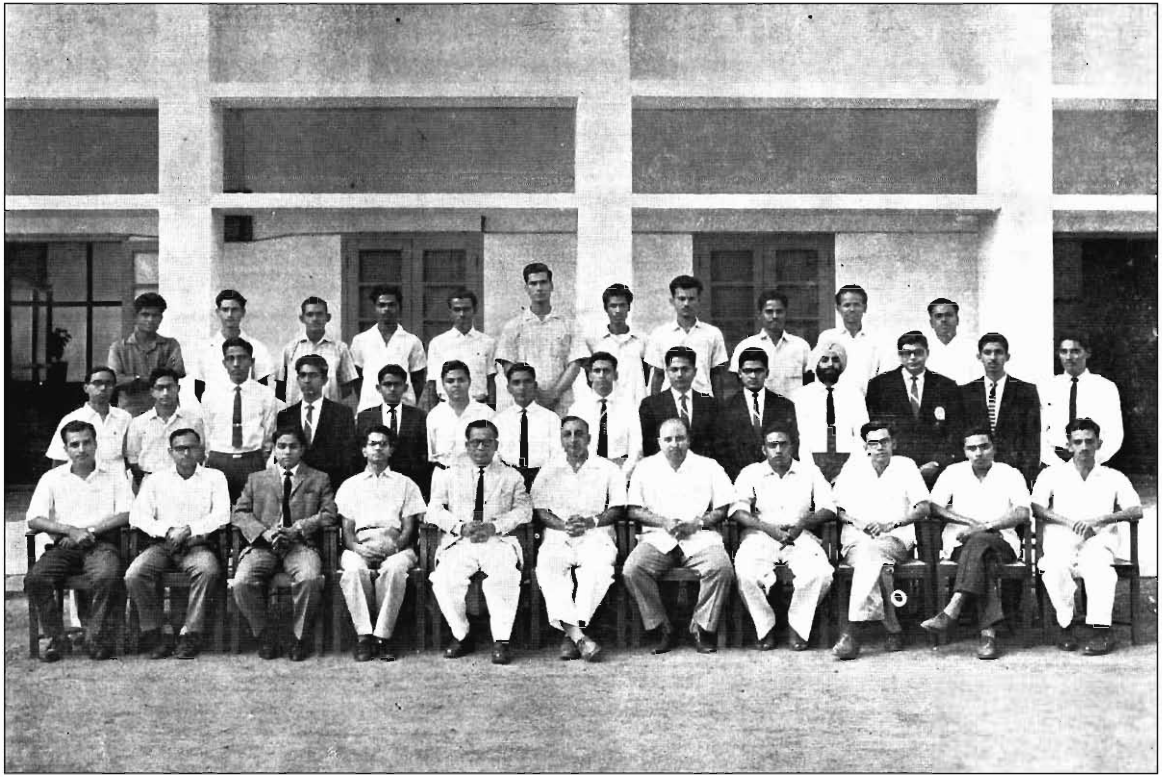
DEPARTMENT OF METALLURGY
INDIAN INSTITUTE OF TECHNOLOGY, MADRAS

The Deparment of Metallurgy has been started with the object of providing instructional facilities leading to the Bachelor's and Master's degrees in Metallurgy and research facilities in the subject, leading in the case of suitably registered candidates, to the Ph. D. Degree. Although the Institute itself commenced its academic work in 1959, the academic activity of the department started about 2 years later, with the first staff appointments made in 1961.

Instructional and research facilities in Metallurgy have been limited to a comparatively very few institutions in the country. Even as recently as a decade ago, only two or three institutions provided such facilities and the number of metallurgists coming out of these institutions annually was very small. The importance of this subject has been however so well realised and the demand has become so great that a good number of new institutions have been set up in the last few years and the total number of metallurgical graduates annually coming out is of the order of 300. This department has been planned to train about 40 metallurgists annually at the graduate level and about 10 at the higher levels and is expected to reach these targets in four or five years.

In common with the rest of the Institute, the Department of Metallurgy has received the bulk of its scientific and ancillary equipment from West Germany. The equipment, as can be imagined, is of the most modern type and would enable the department to be counted among the best equipped laboratories any where. The equipment, could be roughly grouped into the following laboratories:

1. Physical Metallurgy: In this, the structure and properties of metals and alloys are studied.
2. Extractive Metallurgy: Here the production of Iron and Steel as well as the extraction of the non-ferrous metals and alloys and their analysis are studied.
3. Mechanical Metallurgy: In this are included the testing of the Mechanical properties of metals and alloys, and their shaping, by cold and hot working.



DEPARTMENT OF METALLURGY, FINAL YEAR STUDENTS, FEBRUARY 1964

Sitting (Left to Right) : Dr. Ing T. V. Herwadkar, Dr. K. Srinivasa Rahavan, Dr. Ing R.Vasudevan. Dr. Ing Ramachandran, Prof. B. Sengupto, Prof. C. G. Ramachandran, Sarva Sri S. S. Das Gupta, S. Ramakrishna Iyer, S. Sankaran, G.V.Yagnyavalkya, P. Shashidhar Rao.

Standing 1-st Row (Left to Right) : Sarva Sri N. Venkataraman, B. Lakshminarayanan, A. C. Raghuram, C. G. Krishnadas Nair, L. Venkatapattabhiraman, T. Varadarajan, A. T. Santhanam, R. Natarajan, Ramananda Jha, Gyanendra Nath, Tejinder Paul Singh, Anil kumar Mithal, G. Harinarayanan, J. Venkateswaralu.

Standing 2-nd Row (Left to Right) : Sarva Sri J. D. Andrew, B. Raghunatha Rao, M. Dorai Raj, A. Venkata Subbiah, T. S. Krishnamani. M. M. A. Quraishi, S. Durai, Tiruvengadam, S. Rajendiran, R. Santhanam, Lucas Sandy.

4. Foundry Metallurgy : The melting and casting of metals and alloys both ferrous and non-ferrous and examination and testing of foundry sands, mould dressings etc. are studied here.

5. Other laboratories for instruction and research in powder metallurgy, joining of metals, design of metals, design of metallurgical plant, refractories, furnace technology, and electrometallurgy and corrosion.

The range of equipment is very comprehensive and also most of any metallurgical investigation can be attempted. Some of the machines and equipment received already and installed for work are given below :

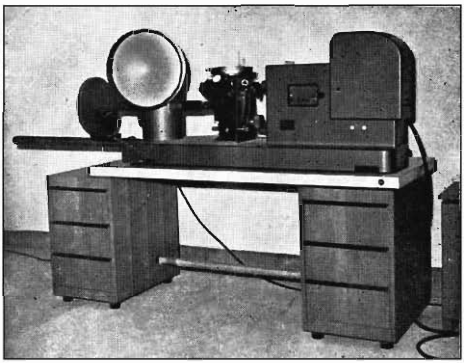
1. Universal Tensile Testing machines, of capacities 1 ton, 10 tons and 60 tons.
2. Vertical Pulsators of capacities 2 tons, 6 tons and 30 tons.
3. Fatigue testing machines, for testing specimens in the form of wire, sheet, strip, etc.
4. Hardness Testing machines for determining Rookwell Hard.nesss.
5. Pendulum Impact Testing machines of 15 mkg. and 30 mkg. capacities, for Charpy and Izod tests.
6. Erichsen's Cupping test machine for evaluating deep drawing characteristics.
7. Portable Hardness testers.
8. Extensometer of various types.
9. X-ray radiographic apparatus of 150 KV capacity.
10. Ultrasonic crack and internal flaw detection apparatus.
11. Magnetic Crack detector.
12. Ultra-violet light crack detector.
13. Strain measuring equipment, using electrical resistance gauges.
14. Strain analysis equipment by photoelastic techniques.
15. Grinding (Fig. 1) and Polishing machines & electro-polisher.
16. Metallographic microscopes (fig. 2)

17. X-ray diffraction apparatus for cystal structure determinations (Fig. 3)
18. Dilatometer with accessories.
19. Microhardness tester
20. Metal spectroscope.
21. Heat treatment furnaces of various sizes and types (Fig.4)
22. Ammonia dissociator for protective gas heat treatment and nitriding.
23. High vacuum, high frequency induction furnace (Fig. 5)
24. Tammann type melting furnaces for operation above 2000°C.
25. Arc and gas welding equipment.
26. Ancillary workshop equipment (Fig. 6)

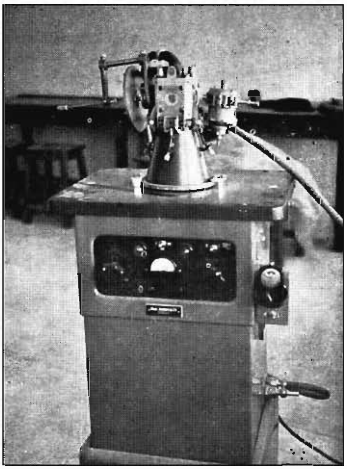
Notable items not yet available are the electron microscope' X-ray diffractometer, high temperature X-ray camera on the structural metallurgy side and a cold working mill and a wire drawing bench in the mechanical forming side. Some of the above may, however, be shortly added to the department.

The department has pioneered a scheme for practical training of under-graduate students which requires special mention. The final year students under-go an intensive, plant-based training programme of about 4—5 weeks, when they are placed in the charge of the technical staff of leading metallurgical establishments of the country and study at close quarters, the practical operational side of metallurgy, following special lectures from the plant staff. The department had, this year, the cooperation of Messrs Tata Iron and Steel Company, Hindustan Steel Limited and National Metallurgical Laboratory in the implementation of this special type of training programme.

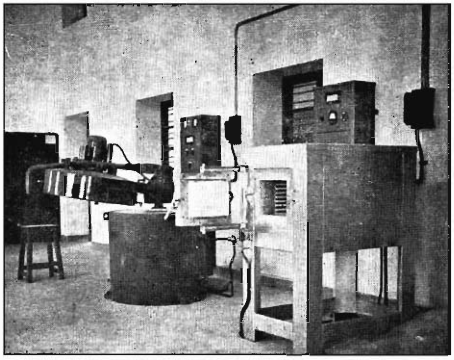
AUTOMATIC GRINDING MACHINE



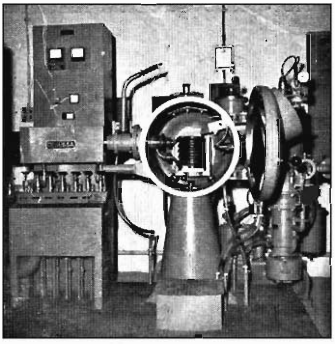
METALLOGRAPHIC MICROSCOPE



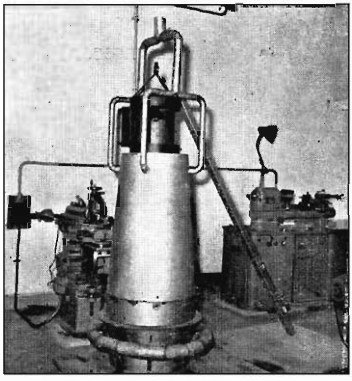
RAY DIFFRACTION APPARATUS



HEAT TREATMENT FURNACES



HIGH VACUUM HIGH INDUCTION FURNACE



MODEL OF BLAST FURNACE
(Made in the Department)

MECHANICAL ENGINEERING BRANCH

R. Devanathan, C/o Shri R. Raghavachari, Engineer,
All India Radio. Akashwani Bhavan, Parliament Street,
New Delhi—1.
Stamps, Sketching and Photography.

K. V. Srinivasan.
23, Willingdon Crescent, New Delhi—11.
Another Photographer from New Delhi.

P. Premanada Prabhu,
C/o Shri P. Manohara Prabhu, Prabhakara Press (Pvt) Ltd.,
Udipi (South Kanara)
Not another Photographer - Yes !

Mohan Krishan Muju. C/o Shri D. N. Muju,
Khanakahi Moulla, Zaina kadal, Srinagar—2. (Kashmir)
Captained Hockey teams and of course likes Sailing and angling.

R. Ganesh. No 6, 19th Cross, Bangalore—12.
Yes, Captained Hockey.

G. Lakshminarasimham. C/o Shri G. K. Rao,
H/o Prof. S. N. Sethna, Dept. of Chemistry, M. S. University,
Baroda (Gujerat); Photography ! How can you ?

V. Amudachari. 84, Narth Masi Street, Madurai—1.
Not even bath-room singing !

D. Satyanarayana Rao. C/o Shri D. RamaRao Patnaik,
Santabommali, (Srikakulam, A. P.)
Corresponds with foreigners.

S. Srinivasan, 52, Bharathi Nagar, Madras—17.
He agrees with V. Amudachari.

A. Malleswara Rao. C/o Shri A. Suryaprakash Rao,
Cloth Merchant, Tuni (East Godavari) A. P.
You said it ! Stamps and Photography.

S. R. Thangavelu C/o Shri S. R. Thiruvengadaswamy,
Oorvalithottam, Singanallur P. O. Coimbatore—5.
Top of the class. Tops in Foot-Ball, he likes applied Mechanics !

M. V. Narayanan. C/o Shri M. V. Chandrasekharan,
Accounts officer, N.P.C.C. Ltd, Raj Stable building, Raj Darbhanga,
Darbhaga (Bihar)
Loves Nature, remember Jacques in 'As you like it'?

METALLURGICAL ENGINEERING BRANCH

Anil Kumar Mithal,
c/o Shri Moti Manohar, Prayag Agricultural Farm,
Garh Road. Meerut (U. P.)
Coins and Contract Bridge.

Gyanendra Nath,
31, Clive Square, Ramakrishna Ashram Marg, New Delhi—1
Hitchhiker. Must be still on the way home.

G. Harinarayana.
'Narayana Mangalam' Kizhcherimel, Chengannur (Kerala)
Captained Basketball. He reaches high.

C. G. Krishnadas Nair,
New Chandrathil, Kunnukara U. C. College, Alwaye (Kerala)
Rock climbing and play-acting.

B. Lakshminarayanan.
1-B, R. K. Puram, Second Street, Madras—33.
He reads Novels.

R. Natarajan.
Saraswathi Nilayam, Nallur, (Tanjore Dist.).
Hard Metallurgist. No hobbies.

A. C. Raghuram,
J. 135, Mill Road, Cottonpet, Bangalore—7.
Please Correspond.

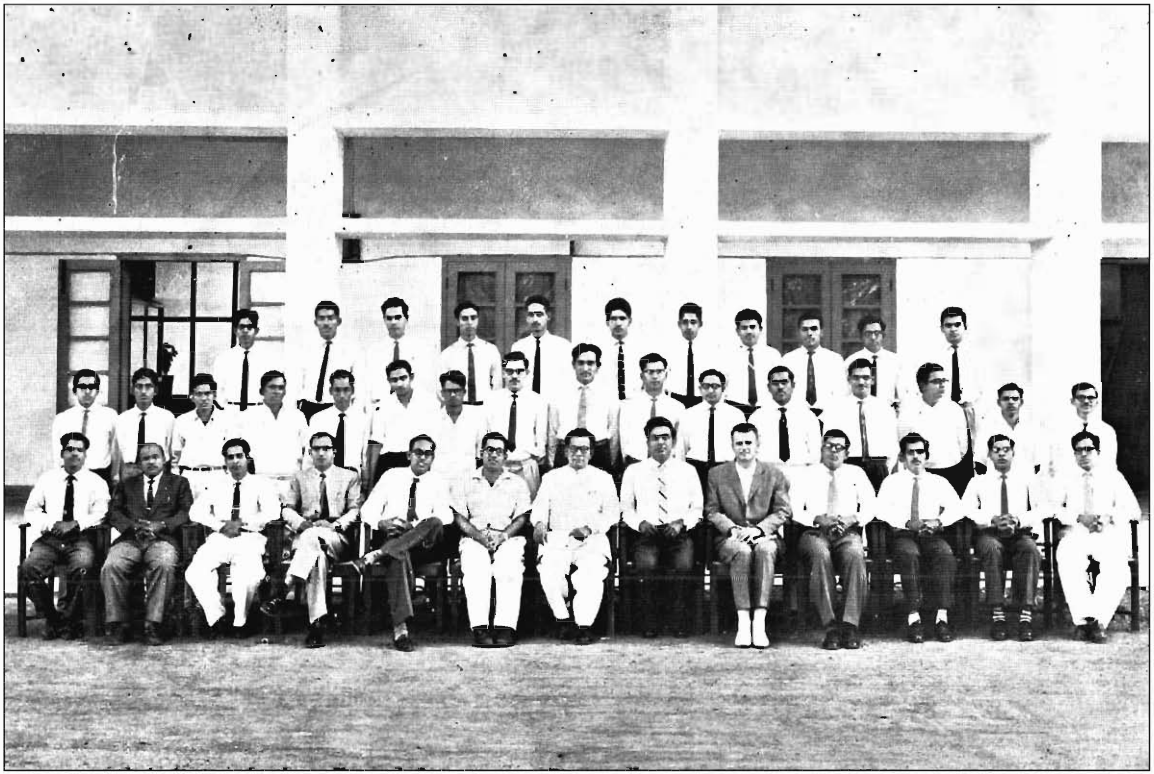
A. T. Santhanam,
c/o Shri A. T. Srinivasan, B,A.B. Ed; 43, III Street, Bhaktavatsalam,
Adyar, Madras—20.
Ran the Co-operative Stores, very co-operative.

Ramanand Jha.
C/o Shri Eknath Jha, Narhan P. O. Darbhanga Dist., Bihar.
Photography, anyone ?

Tejinder Paul Singh.
C/o M/s Diyal Singh Narag (P) Ltd., Sadar bazaar, Delhi—6.
Reads Novels, plays Cards.

T. Varadarajan.
C/o Shri R. T. Chari, 39, 1st Main Road, R. A. Puram, Madras-28.
Studies religion and philosophy.

L. V. Pattabhiraman.
3/37, Agraharam, Sholavandan P. O. Madurai (Dist.)
Debates in Tamil, Writes poetry in Tamil.

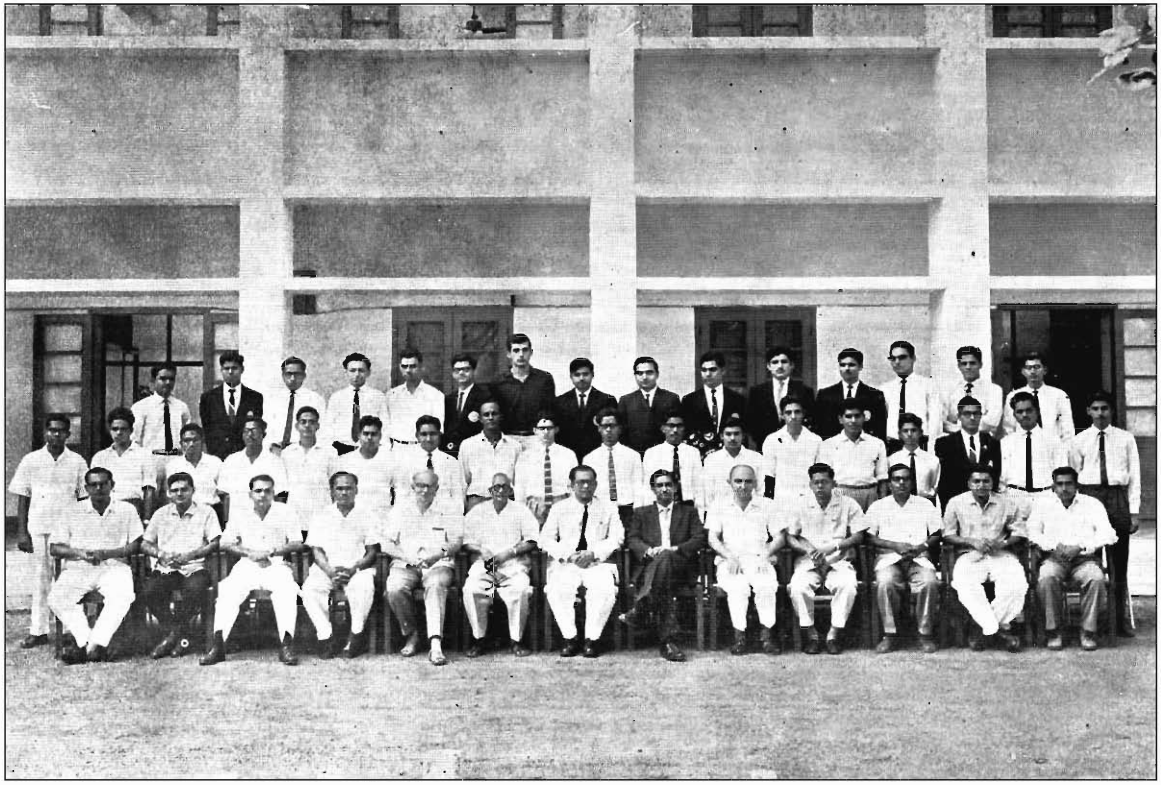


DEPARTMENT OF CIVIL ENGINEERING FINAL YEAR 1963-64

Sitting (Left to Right) : Sri V. D. Muthayya, Sri Y. G. Yadav, Sri M. V. Panduranga Rao, Sri M. H. Abdul Khadar, Sri K. S. Sankaran, Dr. P. C, Varghese (Head of the Department), Prof. B. Sengupto (Director.) Sri R. Natarajan (Registrar), Dr. C. Rouve, Dr.V. P. Sethuraman, Sri S. Balakrishnan, Sri Y. R. Nagaraja, Sri R. Radhakrishnan.

Standing 1-st Row (Left to Right) : Sri G. Viswanathan, Sri C. T. Kumarappan, Sri V. Kannan, Sri M. Innasi, Sri C. S. Krishnamurthy, Sri B. Gopalakrishnan, Sri T. P. Ganesan, Sri B. R. Nagarajan, Sri D. Raja Rao, Sri H. Rama Ayyar, Sri P. Kalyanasundaram, Sri M. S. Subramanyam, Sri N. Rajagopalan, Sri M. R. Sampath kumaran, Sri. V. Raman, Sri N. K. Paretkar.

Standing 2-nd Row (Left to Right) : Sri P. Venkataseshaiah, Sri K. Ramachandra, Sri P. Mohan, Sri B. S. Sudhir, Sri M. Madhava Sampigethaya, Sri A K. Mehrotra, Sri P. K. Prabhakaran, Sri G. D. Daga, Sri V. G. Joshi, Sri V. Koteeswaran, Sri Kanwal K. Dutt.



DEPARTMENT OF MECHANICAL ENGINEERING FINAL YEAR BATCH 1963—64

Sitting (Left to Right) : Sarvashri C. Rajesekharamurthy, S. R. Majumdar, S. Sur, Prof. M. C. Gupta, Dr. Ing Heitland, Prof. I. R. Rao, Prof. B. Sengupto, Prof. R. G. Narayanamoorthy, Dr. Ing Stahl, M. A. Parameswaran, Lakshmi Narayanan, K. S. Padujar, Vaidyanathan.

Standing I-st Row (Left to Right) : Sri. S. Srinivasan, Thiagarajan, R. Mahadevan, K. A. Bhaskaran C. V. Rajan, A. R. Rao, K. V. Srinivasan, D. Prithviraj, R. Devanathan, A. R. Jayaraman, D. D. Samuel, V. C. Varshney, M. U, Krishnamoorthy, R. Seshadri Reddy, M. V. Narayanan, R. Ganesh, S. D. Prabhakaran, S. Gopalakrishnan

Standing 2-nd Row (Left to Right) : Sri D. Satya Narayana Rao, S. R. Thangavelu, V. Amudachari, S. K. Kazi, G. Lakshminarasimham, M. K. Suri, S. S. Randhawa, J. C. Kalyan, P. Devnani, I. C. Mathur, M. K. Muju, U. S. Srivatsava, H. K. Subramanya Rao, P. P. Prabhu, A. Malleswara Rao.

OUR LIBRARY.

The Institute Library which came into existence in June 1959 was housed in the third floor of the A. C. College of Technology, Madras. It was there till August, 1961 when it was shifted to the Institute Campus.

The western wing in the second floor of the Civil Engineering block which it occupies now is a spacious hall measuring 170 feet in length and 30 feet in breadth. One half of the hall is the stack room and the other half is reserved for current periodicals, readers and the staff. It is provided with hugh windows on the southern side and big doors on the northern side to let plenty of natural air and light and also with fans and tube lights. The reading room chairs, tables and periodicals stands have been made by our workshop. As this is only a temporary location, the next shifting of the Library, it is hoped, will be to its own building.

The staff at present consists of one Assistant Lidrarian, 3 Junior Technical Assistants, 2 Upper Division Clerks, 6 Lower Division Clerks, and 4 attenders and 2 peons.

The Institute Library holds now 28108 volumes on a wide variety of subjects in Sciences and Humanities.

Some important Reference works available are given below :

1. World mark Encyclopaedia of the nations.
2. Encyclopaedia Britannica. 24 V.
3. Britannica book of the year, 1959
4. Everyman's Encyclopaedia. Edn. 4, 12 V.
5. Great books of the Western World, 54 V.
6. International critical tables of numerical data, Physics, Chemistry and Technology. 8 V.
7. Junior science Encyclopaedia. 8 V.
8. Mc Graw-Hill Encyclopaedia of science & Technology. 15 V Annual Review, 1961, 1962.
9. Landolt-Bornstein Zahlenwarte and Funktionen. 4 V

I. I. T. CO-OPERATIVE STORES LIMITED, MADRAS. (XNC 484)

I. I. T. Co-operative Stores Ltd., is running into 2nd year of its business activities and it has made a profit of Rs. 4810/- over a turn-over of Rs. 64,773/-(these figures are subject to audit by the Dist. Registrar of Co-operative Societies, Madras.)

The General Body Meeting of the Stores was held on 31-7-63 when the following Office Bearers were elected.

Dr. M. V. C. Sastry	—	President.
Dr. S. C. Dass	—	Vice President.
Sri P. K. Jacob	—	Secretary.
Sri V. K. Vaidhyanathan	—	Treasurer
Members	—	
Sri R. M. Dubey	—	
Sri S. Srinivasan	—	V. B. Tech.
Sri V. Varadharajan	—	III B. Tech.
Sri R. Sarathy	—	III B. Tech.
Sri S. G. Lulla	—	I B. Tech.

The details of important business transaction given below for the half year ending December 63 will inform the members of the appreciable works turned out by the Stores.

Total share capital collected	4000.00
Entrance fee	200.00
Total purchases made	47870.00
Total sale proceeds	46627.00

The Board of Directors of the Cooperative Store are grateful to the Institute authorities for having given a spacious building for the Co-operative Stores. Our thanks are also due to the Engineering unit for the timely help for the development and the up-keep of the Co-operative Stores.

We thank the members of the Staff and Students for their kind co-operation and patronage.

Our special gratitute is also expressed to the ex-Secretary Sri V. D. MUTHAIYYA for his timely guidance and help.

P. K. JACOB.

Secretary, I.I.T. Co-operative Stores

INDIAN INSTITUTE OF TECHNOLOGY
EMPLOYEES CO-OPERATIVE BUILDING SOCIETY LIMITED.

The I. I. T. Employees' Co-operative Building Society was formed in 1960 with the object of acquiring and developing cheap building sites. There are at present 80 members on its roll.

2. As the members are aware, the city of Madras is fully developed upto Guindy, and the value of the sites North, West and East of Guindy has soared to heights far beyond the reach of the salaried classes. The are a to the South and East of Madras upto Vandalur is fast developing and particularly the area around Tambaram is in the grip of spectacular development with the prospect of its being upgraded into a 'A' Class Municipality.

A water supply scheme for Tambaram from Palar river has already been sanctioned. A drainage scheme is also under contemplation. There are quite a number of large and small scale industries already functioning around Tambaram and many major industries and an industrial estate have been sanctioned and are in the process of being set up.

The transport upto Tambaram is adequate being connected both by rail and buses with any part of the city and suburbs. With the declaration of the Madras as an 'A' class city and consequent additional emolument expected by the salaried classes, it is considered that there would be a large efflux of the city population to the suburban area.

3. Keeping all the above consideratons in view, the Society made attempts in 1960 to acquire a site near Tambaram. After protracted correspondence and efforts on the part of the Society with the Collector of Chingleput and thanks to the personal efforts to our Registrar, Shri R. Natarajan, I. A. S., a plot near Tambaram consisting of 10 acres and 46 cents has since been acquired by the Society. The plot is situated on the main road connecting the I. I. T. with Tambaram at a distance of about 6½ miles from the Velachery gate. There are buses running every 35 minutes between the site and the campus and the running time is about 30 minutes. The entire area in between and the proposed building site is in a grip of development with a large number of building already come up.

INSTITUTE GYMKHANA

I. WINNERS OF INTER - COLLEGIATE TROPHIES.

	Trophy	Winners
1.	Institute Trophy for All India Debate	— Queen Mary's College, Madras.
2.	Dr. Klein's Trophy for German Recitation	— A. C. College of Tech., Madras.
3.	Rao Bhadhur Ramachandra Iyer Trophy for Quiz	— Engineering College, Guindy.
4.	Prof. M. V. C. Sastry's Trophy for Group Discussion	— I. I. T. Madras-36.
5.	Prof. Narayanamurthy's Trophy for Entertainment competition	— Queen Mary's College Madras.
6.	Dr. Koch's Trophy for Photographic Competition	— I. I. T., Madras.
7.	Director's Trophy for Athletic Meet	— Y. M. C. A. College of Physical Education, Saidapet.
8.	Consul Gerhard Fischer's Challenge Cup for individual championship in Athletic Meet	— Y. M. C. A. College of Physical Education and Institute of Leather Technology, Madras
9.	Chilukuri Veeravadhanuly Trophy for Tennis (Doubles)	— A. C. College of Tech., Madras.
10.	German Workshop Staff Trophy for Tennis (Singles)	— A. C. College of Tech., Madras.
11.	Prof. R. Krishnamurti's Trophy for Table Tennis (Doubles)	— Engineering College, Guindy.
12.	Mrs. Erna Schroeter's Trophy for Table Tennis (Singles)	— Standley Medical College, Madras.

II TROPHIES FROM OUTSIDE WON BY OUR STUDENTS

1. Engineering College Trophy for Quiz Competition won by Sri Siddhartha and Sri Venkateswaran.
2. Saturday Evening Club Trophy (Shield) for Quiz competition won by Sri S. Nageshwar and Sri Venkatesan.
3. "V. Guruswamy Memorial Shield" for Debate won by Sri Siddhartha and Sri T. S. Ananthu.
4. Sportex Cup for Table Tennis (Doubles) won by Sri S. Gopalakrishnan and Sri Subba Rao.
5. Sundaravaradhan Cup for Tennis (Singles) won by Sri Lionel Paul.
6. A. Krishnaswamy Iyer Cup for Table Tennis (Doubles) by Sri S. Gopalakrishnan and Sri Subba Rao.
7. Loyola College Principal's Cup for Table Tennis (Singles) won by Sri Subba Rao.
8. Inter I. I. T. Meet Trophy for Tennis won by Lionel Paul, M. Kalappa, R. P. Shetty, Arun swamy and A. S. Bawa.

III. INTRAMURAL COMPETITIONS

Trophy		Winners
Sharman & Company Trophy for Cricket	—	Shivaji House
Surana & Company Trophy for Foot Ball	—	Ashoka House
Pioneer Sports Company Trophy for Hockey	—	Shivaji House
Meenakshi Memorial Trophy for Volley Ball	—	Ashoka House
Mehendru Sports Company Trophy for BasketBall	—	Ashoka House
Schroeter's Trophy for General Championship	—	Shivaji House

adjudged first and second respectively at the debate presided over by Shri A. C. Gangadharan.

The Quiz was conducted by the well known Quiz master Shri R. V. Narayan. Shri V. Venkatesan came first closely followed by Shri Vikram Rao and Shri G. R. V. L. Narasimhan.

The Literary Activities Committee would like to thank the administration and the Gymkhana for providing facilities such as transport, loudspeakers and music.

This year also saw the arrival of the long awaited water cooler which however was operating only on our return from the holidays.

The Mess Committees have shown considerable activity as is evidenced by the mounting mess bill. Quality at any cost seems to be their motto.

The Social Activities committee organized celebration on the various feast days such as Holi and Deepavali. Various minor improvements have been made such as the provision of cane chairs and curtains for the common rooms.

Our thanks are due to the Warden and Assistant Wardens who have endeavoured to the best of their ability to make Krishna Hostel a "home away from home."

Wish you all the best, Krishna Hostellers.

CAIUS CAMILLUS

THE EIGHTH INTER UNIVERSITY YOUTH FESTIVAL

R. A. VASWANI

The I.I.T., Madras participated for the first time in an Inter-University Youth Festival held in Delhi last November. A sixteen member contingent consisting of 12 boys, 50% of the I.I.T. lady student population, and three staff members left Madras on the 8th November 63, participated in the Festival from the 11th to 18th November and returned on the 22nd November.

It was truly a memorable week that we spent in the Festival Camp pitched at the Talkatora Gardens, New Delhi. Eight hundred students—boys and girls—lived together in an atmosphere of bonhomie and saw a rich presentation of Indian dances, instrumental and vocal music, and plays. The items presented were of a very high—almost professional—standard. For the literary minded there were debates and group discussions.

On arriving at the Campus it did not take long to get into the spirit of camraderie. Formal introductions were not necessary since the authorities provided each participant with an identification badge which had to be pinned on the lapel. Accommodation was provided in tents which were furnished with eight charpoys, one table and two chairs. Two different universities shared each tent.

The Festival was inaugurated by Mr. Nehru and Valentina Tercshkova, the first woman cosmonant, was also present on the occasion. Three sessions in the open air theatre followed by a camp fire till late in the night made each day a really hectic one.

The I.I.T. Madras made its mark in the English Debate and Group Discussions. The Malayalam shadow play staged by us was a novelty which appealed to many. Small though our contingent was, I am proud to say, we became very popular. Our sense of humour-poor jokes (P. J's) and "sick" ones too—stood us in good stead. Prof. R. Krishnamurthi, Contingent-in-charge, made his presence felt even more so by acting as a judge for one of the Group Discussions—a singular honour I may tell you. Dr. N. Klein was perhaps the most popular "Resource Person" in the camp, not because he was the only foreigner, but because of his ability to fit comfortably into any age-group.

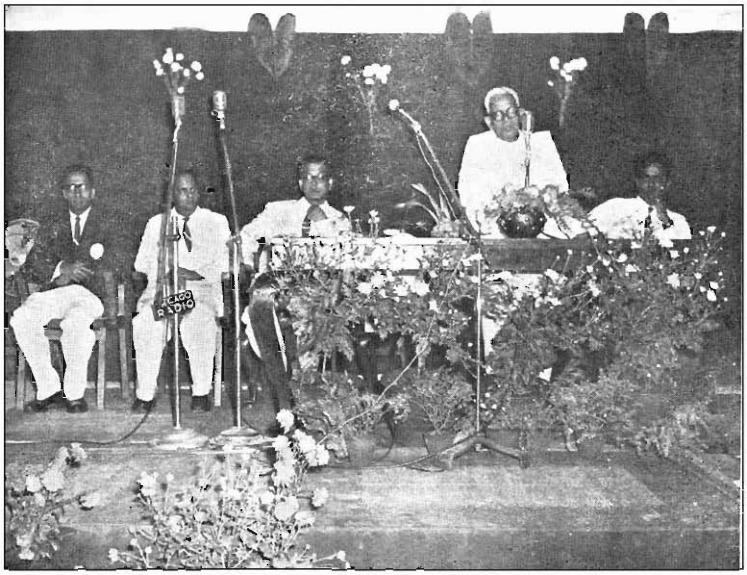
A special variety entertainment programme was put up on Deepavali Day. Shrimati Indira Gandhi was the chief guest. The I.I.T. put up a popular Malayalee folk-song which captured the capacity audience with its catchy time and energetic rendering. "The Pricess of Poplipotam" a six minute farce put up by the I.I.T., the Calcutta University and the A.I.I.M.S.-Delhi, brought the house down. V. Siddhartha was the announcer for the evening.

In concluding I must point out the top-class arrangements made by the authorities. Each tent was supplied with five newspapers every morning; hot water was provided for baths; a one-day laundry service was provided at a nominal cost; a special officer looked after the railway bookings for the return journey; a box of delicious Indian sweets was given to every participant on Deepavali Day; and many other little things which cannot be mentioned but which nevertheless impressed upon us the care of detail paid by the authorities. The food served was of a high standard and the candle-light dinner on the last day was truly a feast. Many delightful hours were spent in the excellent canteen on the campus. The central vista of the camp was adorned with the coat of arms of the Universities on one side and illuminated totem-pole like posts on the other. The flags of the participating universities fluttered on a high ridge at one end of the central vista.

It was colourful and it was gay; it had its higher moments and it had its serious moods; hearts were lost and laurels were won; and we returned richer richer in the knowledge of Indian culture; richer in friendship and experience; and richer with the knowledge of our own shortcomings!

LITERARY ACTIVITIES REPORT (1963 - 64)

Yet one more year has gone by. Slowly but steadily we have been able to establish a reputation in various fields of literary activity. On the home front, it was difficult to dislodge the old veterans like Mr. Siddhartha, Mr. Ananthu, Mr. Vaswani and Mr. Venkateswaran. But in the various activities conducted by other Colleges, we were fairly successful. Our debating team was successful in the Madras Junior Chamber of Commerce debate and as far as quizes went, there was a sudden fall of the once mighty "Cobra", while young freshers like Venkatesan came up to fortify the ranks. The "Saturday Evening Club" Trophy and the Eng. College Trophy were ours and credit goes to Mr. Nageshwar, Mr. Venkatesan, Mr. Venkateswaran and Mr. Siddhartha. The grand finale of the literary activities was the



LITERARY & CULTURAL WEEK
Shri M. Bhaktavatsalam, Chief Minister of Madras, delivering the address

Shri M. Bhaktavatsalam presenting the Trophy

Mrs. Shanti Sengupto presenting the Trophy for
Inter-collegiate Entertainment Competition.

Mrs. Koch presenting the Trophy for Inter-Collegiate
Photographic Exhibition

Inter - Collegiate events which were conducted with a fair measure of success in spite of other activities overlapping in this period. There were only two outstation teams - one was from our sister Institute at Kharagpur and the other one was the Eng. College team from Sri Venkateswara University. Q.M.C. of Madras literally ran away with the trophy while both Individual prizes were successfully won by Mr. Siddhartha and Mr. Vaswani. Chandran and Reddy of Eng. College were successful in the Quiz with a large majority of points. The "Group Discussion" trophy was once again retained by the home team, which was undoubtedly the best on that day. The German Recitation Trophy went out for the first time when Mr. Venkateswaran of A. C. Tech. performed well. The last day's programme concluded with an Inter-Collegiate Entertainment Competition, which was won by the ever gay ladies of Q.M.C.

It might be mentioned here that but for the interest taken in the literary activities by the committee members Mr. Vikrama Rao and Mr. Vaswani, and Dr. Venkateswarlu in particular, the various items conducted by the Institute would not have been half as successful as they were.

It is hoped that the future will hold bright promises of glorious success in the various literary activities.

KRIPANARAYANAN
(Secretary, Literary Activities)
1963-64.

FINE ARTS COMMITTEE

The most encouraging news for the Fine Arts Committee for the year 1963-64 was the presentation of the charming trophy for photography by Dr. Koch, Professor of Physics, I.I.T., Madras, for which the Committee is very grateful.

It was in the year 1961-62 that our Institute participated for the first time in the First All India Inter-Collegiate Photographic Competi-

tion organised by the I.I.T. Kharagpur and I am delighted to report that in Black & White E. A. Olia's "THE DESTINIES I DRAW" and J. M. Anand's "BATA OVERSIZE received 1st and 2nd positions repectively.

In colour, the entry "THE DAILY DEFEAT BY L. K. Sharma received the 3rd prize and "THE GOLDEN CROPS" by K. Mahesh received a certificate of merit.

The Institute also participated in the same competition in 1962-63 and our entries received several prizes in colour.

The first Inter-Collegiate Photographic Competition organised by the Fine Arts Committee, I.I.T., Madras was held in December 63. Quite a number of Colleges responded to our invitation. The home team bagged the trophy by obtaining maximum points. I hope the members of the committee would agree with me when I say that the standard of the entries received was high and encouraging. I am grateful to E. A. Olia, C. V. Sahasranaman, J. M. Anand, S. S. Chandak and our vigourous P.T.I. Shri P. K. Jacob for the pains taken in setting up the exhibition. I am indebted to the members of the staff who really took interest in contributing entries to the exhibition and made it a success.

I would like to take this opportunity to thank Dr. D. Venkateswarlu the indefatigable President of the Institute Gymkhana for his encouragement and constructive suggestions and Dr. V. Srinivasan of Chemistry department for his helpful guidance every now and then throughout.

LOVV KUMAR SHARMA
Secretary, Fine Arts Committee.

GAMES REPORT FOR THE ACADEMIC YEAR 1963—64

The year opened on an enthusiastic note—this being our first year of participation in the Inter Collegiate League Tournaments. Our Start was very promising and it appeared as though the proverbial beginner's luck would enable us to walk away with a few trophies atleast. But once the opening period wore out, we found that it needed plenty of practice and experience to maintain that fine start.

Now for a record of our achievements.

Our strong Table Tennis Team proved their worth by walking away with the Sportex Inter Collegiate Trophy. In the Bertram Tournaments conducted by Loyola College our Team once again did their bit by sweeping the boards. Our champ Subba Rao won the singles very convincingly and Subba Rao and S. Gopalakrishnan took the doubles.

The performance of our Tennis Team was also very creditable. We reached the finals of the Inter Collegiate League by scoring wins over strong team from the Law and A. C. Colleges. In the finals however, we lost to our neighbours the Guindy Engineering College by the odd match in three. Lionel Paul of our Institute won the Jain College Singles Title and was the runner-up in the Bertram and I. I. T. open singles and R. P. Shetty and Lionel Paul finished in the runners-up berth in the I. I. T. Open Doubles.

Though our Hockey and Football Teams did not win any trophies, special mention should be made of their performance as they defeated and drew with many strong teams, which have in former years, provided the nuclear of many a University Team. Our Hockey team entered the Jain College Tourney and did well to make the semi-final grade, where they lost to Annamalai University, the ultimate winner. In the recently conducted Krishnamurthi Cup Tournament they have proved themselves once again, by reaching the finals with a string of good victories behind them.

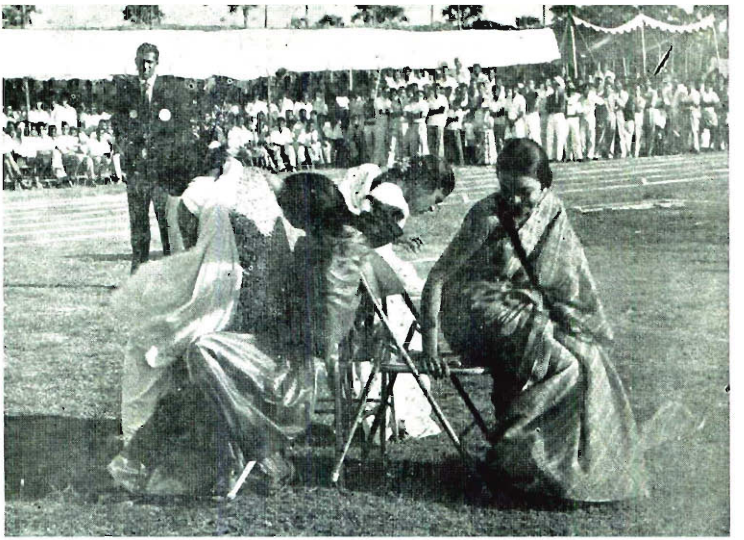
A small Athletics team was entered in the Presidency College Open Athletic Meet, and though our entrants were not in the peak of training, their performance was very promising especially that of G. Sri-

kanth (second in the 400 metre hurdles) M. Bhaskaran (second in the pole vault) and Jacob Dominic (second in the Long Jump and the Hop step and jump).

Our College Sports Day was held in December and many of the old records fell by the way side. G. Srikanth of the Shivaji House proved to be the top athlete by winning the Individual Championship comfortably. The interest on the sports Day was heightened by such Items as the Ladies Musical chairs, the staff race, the childrens' races and the staff vs. students Tug of war in which the students pulled up the staff members for a change.

The Inter I. I. T. Sports Meet held in Kharagpur in December was opened by our Director Prof. Sengupto after a very impressive marchpast. Our teams made a creditable showing and special mention was made of P. K. Olia (Gymnastics) G. Srikanth(Athletics) M. Kalappa (Tennis and Athletics) and Lionel Paul (Tennis). Our Tennis team in particular did extremely well to win the Tennis Trophy despite the strong opposition provided by Kharagpur. Three more of our teams, Table Tennis, Hockey and Volleyball reached the finals, but luck eluded them and they had to content themselves with the runners-up positions. In the Gymnastics, Olia proved himself a veritable one man team and it was through his sterling performance, that our team managed the 3rd place. The honours of the opening day belonged almost entirely to M. Kalappa. He not only helped us beat Kharagpur in Tennis, but in between matches, he competed in the Hop Step and Jump, in which he proved himself peerless. At this stage, I think I would be expressing the opinion of all the participants when I say that we are extremely grateful to the Kharagpur I. I. T. for the warm hospitality extended to us and I sincerely hope that in the next Inter I. I. T. Meet which is to be held here, we can, to some extent, repay their kindness.

The first Inter-Collegiate Sports Meet conducted by our Institute on the 1st and 2nd Feb. 64 was quite a success despite the relatively few entries from the city colleges. The meet was opened by our Director midst much fan fare. Right from the start, the strong contingent from Y. M. C. A. College of Physical Education started putting on pressure and they ended up right at the top of the points table and thus annexed the coveted Director's Trophy. Gurunathan (Institute of Leather

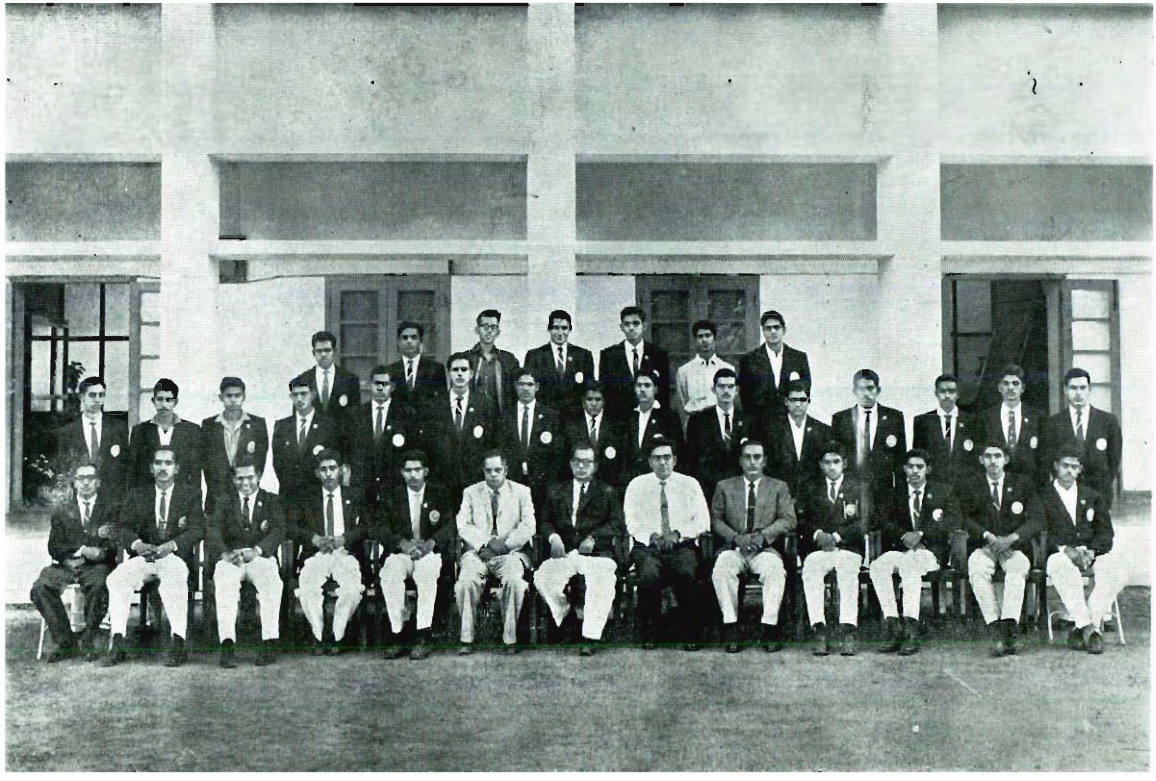


LADIES MUSICAL CHAIRS

TIME FOR TEA

PRIZES GALORE!

AND THEN THE SPEECH

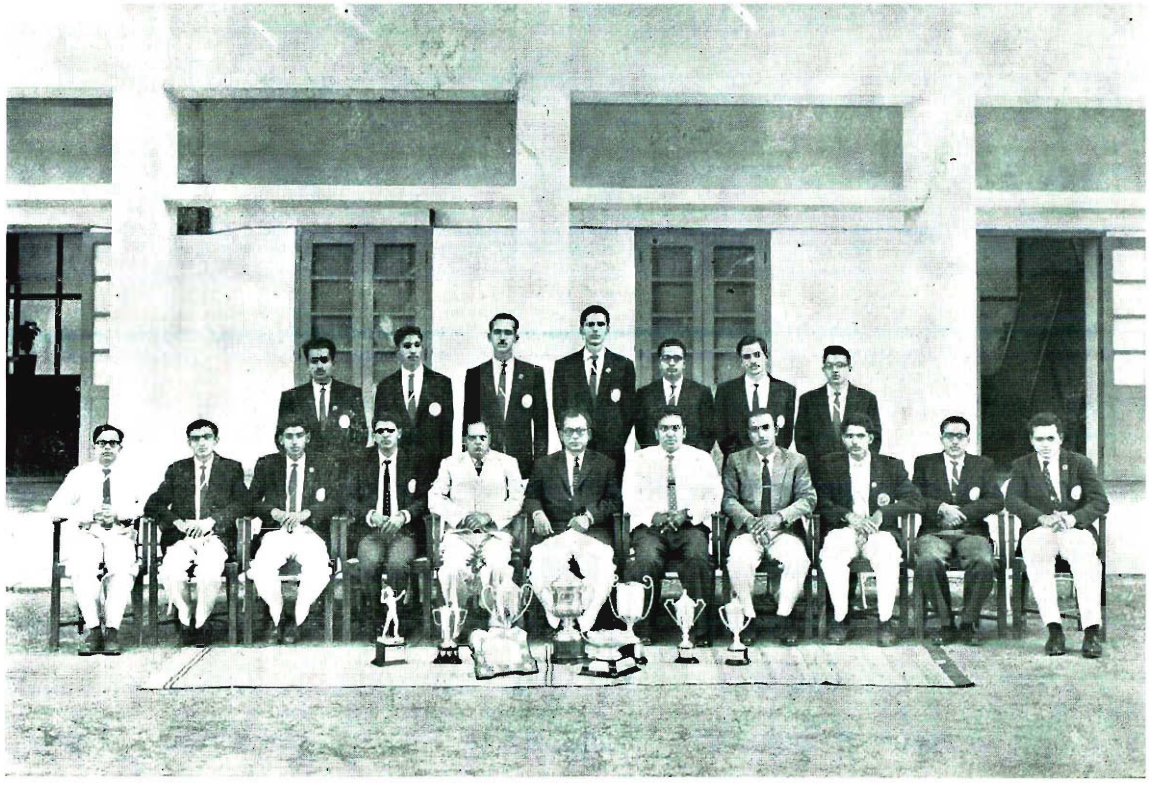


INSTITUTE GAMES AND SPORTS TEAM 1963—64

Sitting (*Left to Right*) : Ananda Bhat, R. P. Shetly, Lionel Paul, S. Gopalakrishnan, P. K. Jacob, Dr. D. Venkateswaralu (President, Institute Gymkhana), Prof. B. Sengupto (Director), Shri R. Natarajan, (Registrar), V. Srinivasan, Jacob Dominic, M. Bhaskaran, Harinarayanan, Janadhanan.

Standing 1-st Row (*Left to Right*) : Sudhir Chandra, T. K. Nagarajan, Viswanathan, M. H. I. Khan, Subramanian, M. Kalappa, Sundara Raju, Sashibhooshan, Venkateswaran, Sharma, Gyanendranath, Ramachandra, Vijaya nathan, Barde, G. Srikant.

Standing 2-nd Row (*Left to Right*) : Angamuthu, Anantharama Iyer, Gopal Ramachandran, Mahindru, M. Shivaram, Vijay Kumar, Radhakrishnan.



INTER COLLEGIATE PRIZE WINNERS 1963—64

Sitting (Left to Right) : T. S. Ananthu, R. A. Vaswani, S. Gopalakrishnan, R. Venketeswaran, Dr. D. Venkateswaralu (President, Institute Gymkhana), Prof. B. Sengupto (Director), Shri R. Natarajan, (Registrar), V. Srinivasan, P. K. Jacob, P. Ananda Bhat, Lionel Paul.

Standing (Left to Right) : Madhusudan Menon, Kumar, R. P. Shetty, M. Kalappa, Venkatesan, S. Nageshwar, L. K. Sharma.

	Mr. A. Bose, Officer-in-Charge, Birla Industrial & Technological Museum, Calcutta
	Brigadier B. M. Chakravarti, Director, Electronic and Radar Development Establishment, Bangalore.
July	Dr. K. L. Shrimali, Union Minister for Education, New Delhi
August	Prof. McGauhey, Chairman, Division of Hydraulic and Sanitary Engineering, University of California, Berkeley, U. S. A.
	Mr. R. P. Padhi, Joint Secretary, Ministry of Finance, New Delhi
	Mr. K. Rahlenbeck, Economic Officer, Consulate of the Federal Republic of Germany, Madras.
	Dr. A. L. Mackay, Birkbeck College, London.
	Dr. G. B. James, State Director of Vocational Training, North Carolina, U. S. A.
September	Professors Morrison, E. R. Slemon and I. W. Smith University of Toronto, Canada
October	Prof. Haas, University of Delft, Netherlands
	Dr. C. H. Luders, Charge de Affaires, Embassy of the Federal Republic of Germany, New Delhi.
	Mr. R. Frank Thomas, General Manager, IBM World Trade Corporation, Bombay.
November	Prof. V. T. Cherepin, Unesco Expert, IIT Bombay
	Mademoiselle R. David, French Trade Commission, New Delhi.

A Ceremonial Parade was arranged on the 26th January 1964, the Republic Day and Prof. B. Sengupto, Director, hoisted the flag at the open air theatre.

In view of the National Emergency all camps were suspended. Instead of camps we conducted six out - door exercises. The exercises were conducted for about 12 hrs. duration and at distant places like Pallavaram.

The 'B' and 'C' certificate examinations were conducted on 22nd Feb. 64. 114 cadets appeared for 'B' Cert. exam. and 9 for 'C' Cert. exam. We feel glad to report that 69 cadets (60%) have passed the 'B' Cert. exam. and 9 cadets have passed the 'C' Cert. exam.

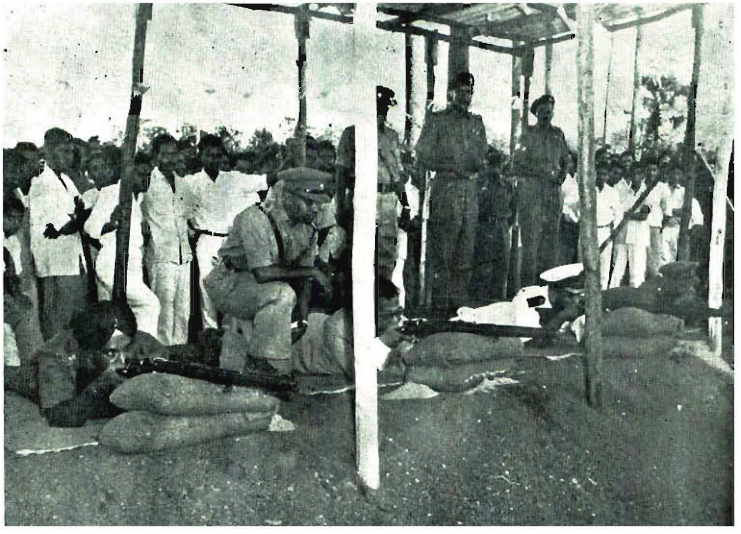
A 'Bara-Khana (Dinner) was arranged on 22nd Feb. 64 and Commodore Mody, Director NCC, Madras & Pondicherry and Prof. B. Sengupto, Director, addressed the cadets. About 900 cadets and guests attended the dinner.

DISTINGUISHED VISITORS TO THE I. I. T. MADRAS

From the month of April 1963 :

April	Professor Gerhard Derge, I. I. T. Kanpur
	Sri B. S. Nanjundiah, Secretary, Association of Mysore Engineers, Madras & Party
	Madame Mednikova, Chief of the Laboratory on Ionosphere Research, Phora, USSR aud Mr. Poscheyrov, Director, Leningrad Branch of the Institute of Physics, USSR
	M. Robert R. Worth, Editorial Director, W. A. Benjamin Inc., New York
May	Dr. Lal C. Verman, Director, Indian Standards Institution. New Delhi

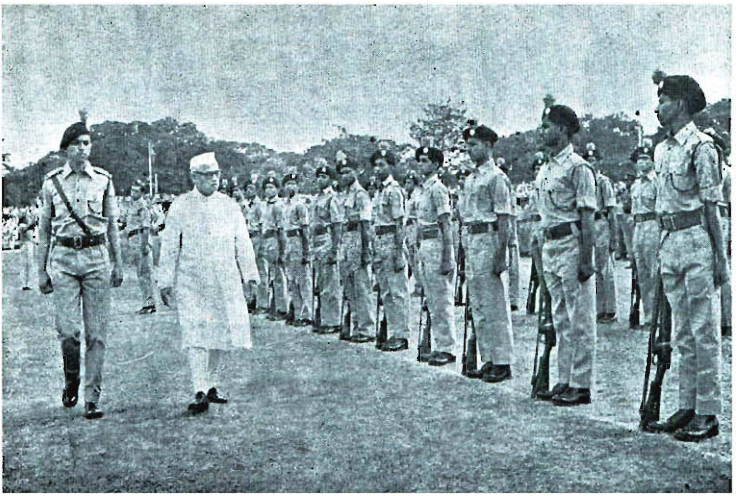
INSTITUTE N. C. C. DAY, 27TH MARCH, 1963
Brig. Ram Singh, Commandant, O. T. S., Madras, inspecting our Cadets.



INAUGURATION OF THE SHORT RANGE BY BRIG. RAM SINGH ON 27TH MARCH 1963
Steady.....Fire!

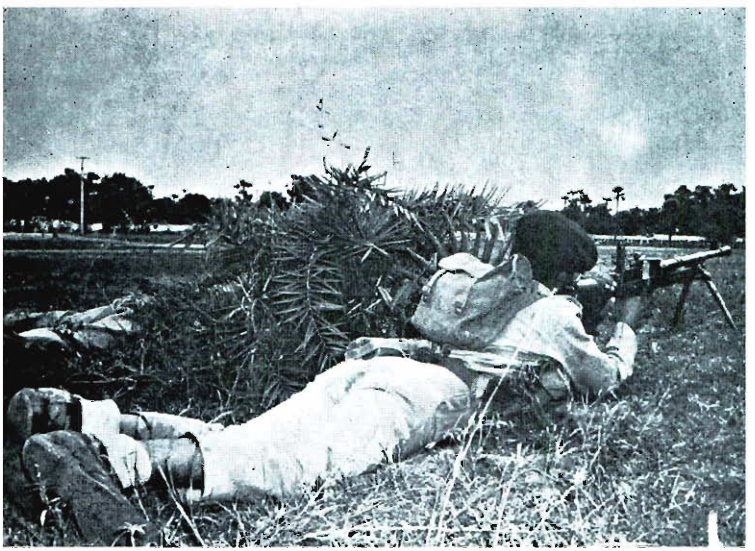
L to R: Lt. Col. S. C. Chowdary, OC, NCC HQ, Madras;
Prof. B. Sengupto, Director IIT, Madras.

Commodore M. Heble, Director, N.C.C., Madras & Pondicherry;
Brig. Ram Singh, Commandant, O. T. S., Madras.



THE PROMISE PARADE DAY, 15TH AUGUST, 1963

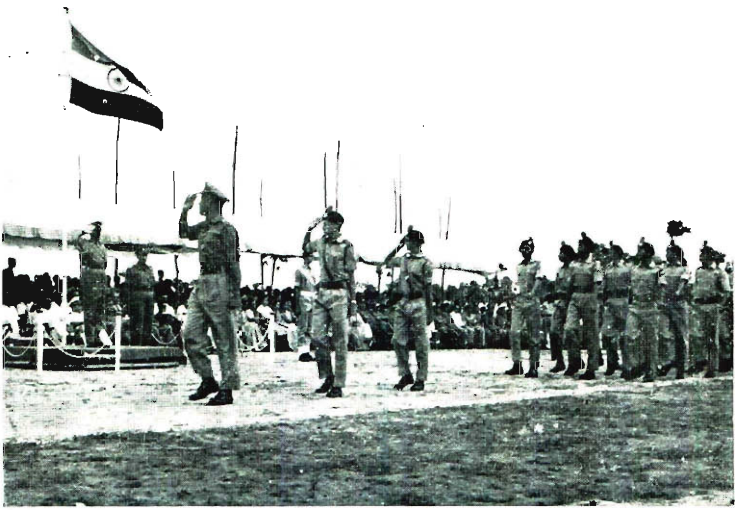
Governor of Madras, Shri Bhishnuram Medhi, inspecting the Guard of Honour presented by our cadets at the Corporation Stadium.



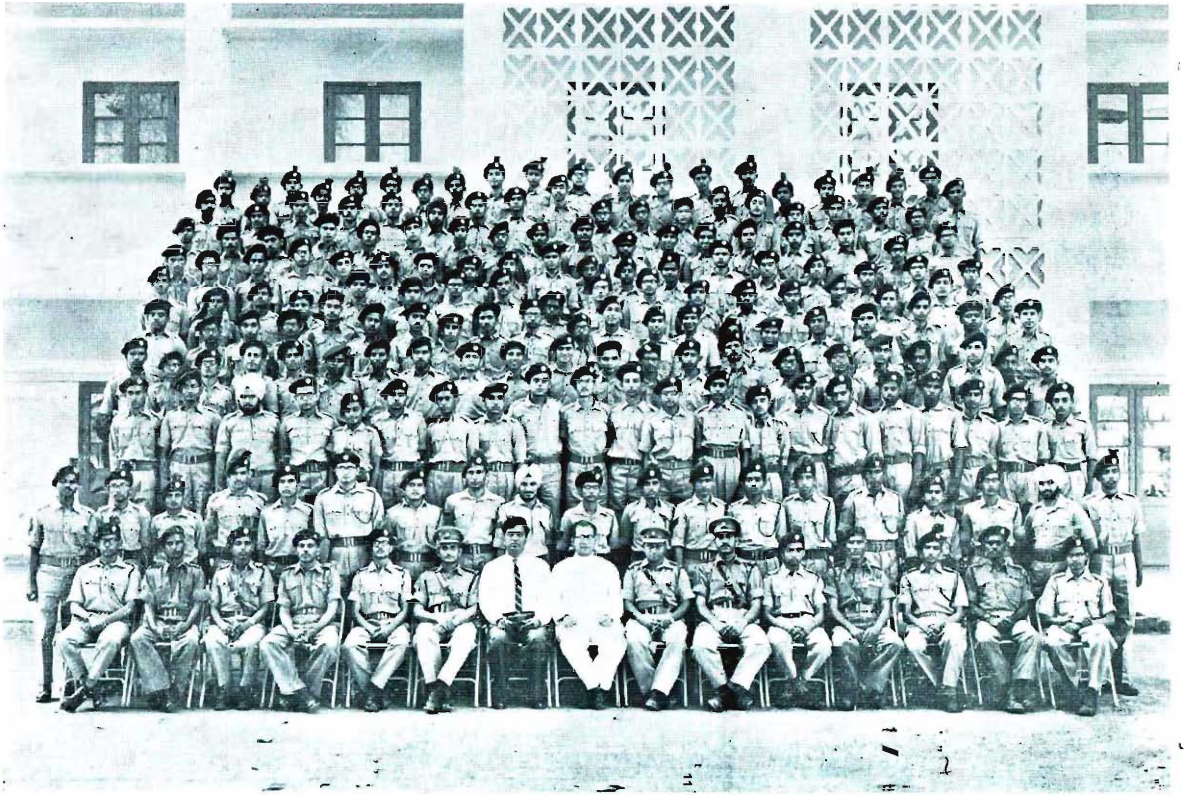
A short burst

A CADET FIRING A LIGHT MACHINE GUN

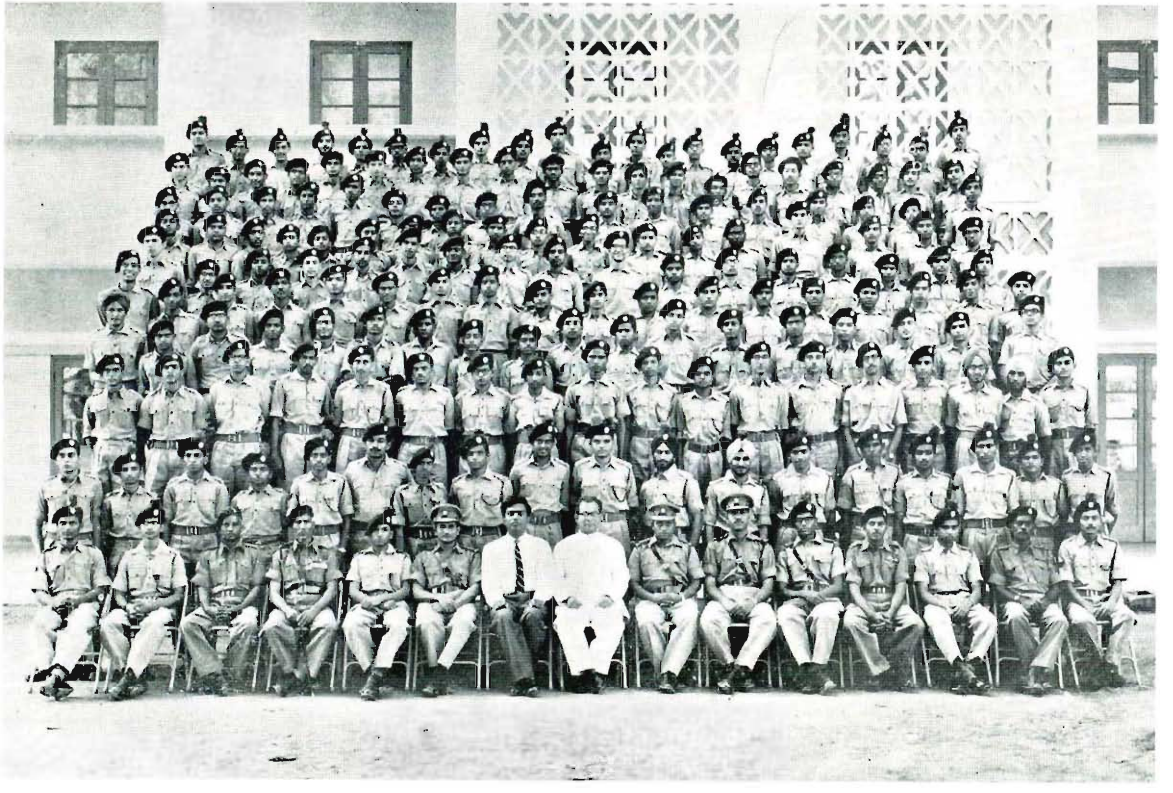
March Past – Institute N.C.C. Day 4th Dec. 1963.



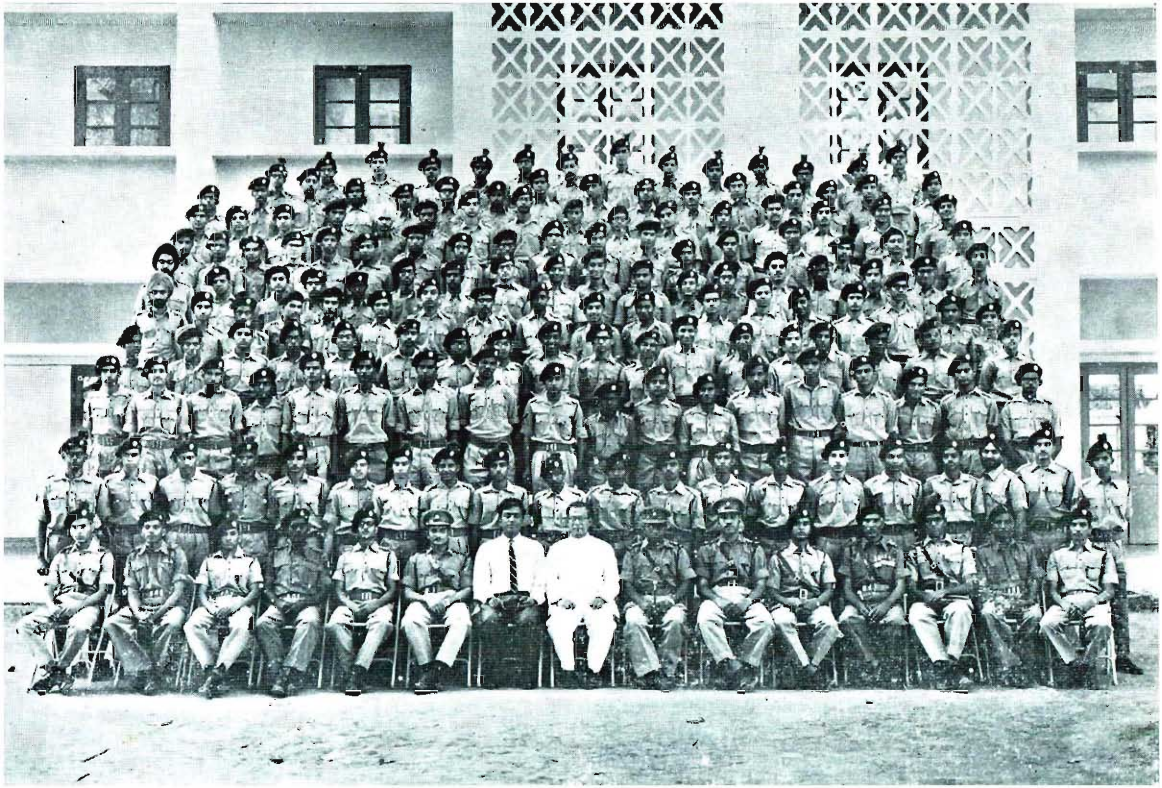
Prof. B. Sengupto, Director, receiving the Chief Guest
Maj. General Virendra Singh, Director-General, N.C.C , New Delhi,
on the Institute N.C.C. Day on 4th Dec. 1963.



No. 9 NCC Rifle Coy, 52 Madras NCCR Bn. IIT Madras.



No. 8 NCC Rifle Coy, 52 Madras NCCR Bn, I.I.T Madras.



No. 7 NCC Rifle Coy, 52 (Madras) NCCR Bn., I.I.T., Madras.

N. C. C. REPORT FOR THE YEAR 1963 — '64.

Under the compulsory military training scheme to all able bodied students NCC training is imparted to all Students of I, II, III B. Tech and I yr. of three year degree course from July 1963. The present strength of the three Rifle coys is 660 and arrangements are under way to raise technical units. The unit has become richer by the addition of two officers - 2/Lt. M. Ramamoorthy from the O. T. S., Kamptee and 2/Lt. M. Sarvotham from the O. T. S., Pachaiyappa's College, Madras. Both these officers joined the Unit in July, 1963. 2/Lt. Radhakrishnan who was with us last year, has left the Institute.

Our NCC schedule consists of two parades two hours each week. The training programme is exhaustive though, perhaps, a liltle exhausting as well from cadets point of view and includes drill, weapons training field craft, map reading, first - aid and aid to civil power.

Out of 18,000 cadets participating in the Promise Parade held at Madras on the 15th of August, 50 of our Institute cadets were selected for presenting the sole ceremonial Guard of Honour to His Excellency, the Governor of Madras. Our Senior Under Officer, R. Rajamani won credit for himself and the unit by commanding the Guard of Honour with distinction.

400 of our cadets and officers participated in the annual NCC Day on the 20th of October. Our cadets were selected to lead the column at flag march. 350 cadets of our NCCR Companies took part in range practice on the 12th and 13th October.

Another "red - letter" feature of our NCC activities this year was the selection of cadet Jai Kumar for attending the mountaineering course at Manali, Punjab, arranged by the Director, NCC, Madras & Pondicherry. He had the distinction of climbing a peak 18,200 feet high. Under Officer T. K. Romakrishnan was selected to participate in the Republic Day parade at New Delhi in January 1964. However he could not do so due to his annual examinations. Under Officer V. Varadarajan is selected for the all India Summer Training Camp. The Institute N. C. C. Day was celebrated on 4th Deeember 1963 and Maj. General Virendra Singh, Director - General, NCC, New Delhi was the chief guest.

Technology) proved his worth by winning the shorter races comfortably. John Lukose (Y. M. C. A.) made a clean sweep of the throwing events, while the longer distance races were shared between Viswanathan (Presidency) and Jain (Y. M. C. A.). Other prominent performers were Francis Leo (A. C. Tech) who soared to dizzy heights in the Pole Vault, Ethiraj (Y. M. C. A.) who won the Long Jump and the High Jump with comparative ease, Shwewe (Y. M. C. A.) the popular winner of the High hurdles and Royappa (Presy.) who edged out Kalappa in the Hop step and jump. Kalappa however had the satisfaction of breaking the Institute record in no less than 5 out of his 6 jumps. Anand Swaminathan did creditably well in his second outing in the High Hurdles by finishing a close third and G. Srikanth put in a fine burst to nose Anand Swaminathan out of the 3rd place in the 400 metres. M. Bhaskaran kept up his consistent performance in the Pole Vault by taking the second place and Kalappa and S. Puri kept up the good work by taking the 3rd places in the Long Jump and Hammer throw respectively. The surprise package of the whole meet however, was the fine showing of our 4 x 400 metres relay team of Krishna, Shrest, Swaminathan and Srikanth who finished a close second to the strong YMCA quarter. The high light of the evenings proceedings was the Ladies' Musical Chair, where the I.I.T. entrants managed to stave off a strong W.C.C. challenge and win the first two places.

The meet was followed by a sumptuous tea, after which the prize distribution was held. The Chief guest of the evening was Dr. Gerhard Fischer, the German Consul in Madras a champ athlete in his hey day. He gave the athletes a lot of advice and further encouraged them by instituting a trophy for the best individual athlete. This trophy was shared by Lukose and Gurunathan. Mrs. Fischer distributed the prizes. The Schroeter cup for the Inter House General Championship incidentally went to Ashoka House, whose captain M. Bhaskaran received the trophy amidst tremendous applause.

In conclusion, I would like to thank our Director, Registrar, the President of the Gymkhana and the Physical Training Instructors for their unstinting help and guidance which went a long way towards inspiring and encouraging us greater efforts.

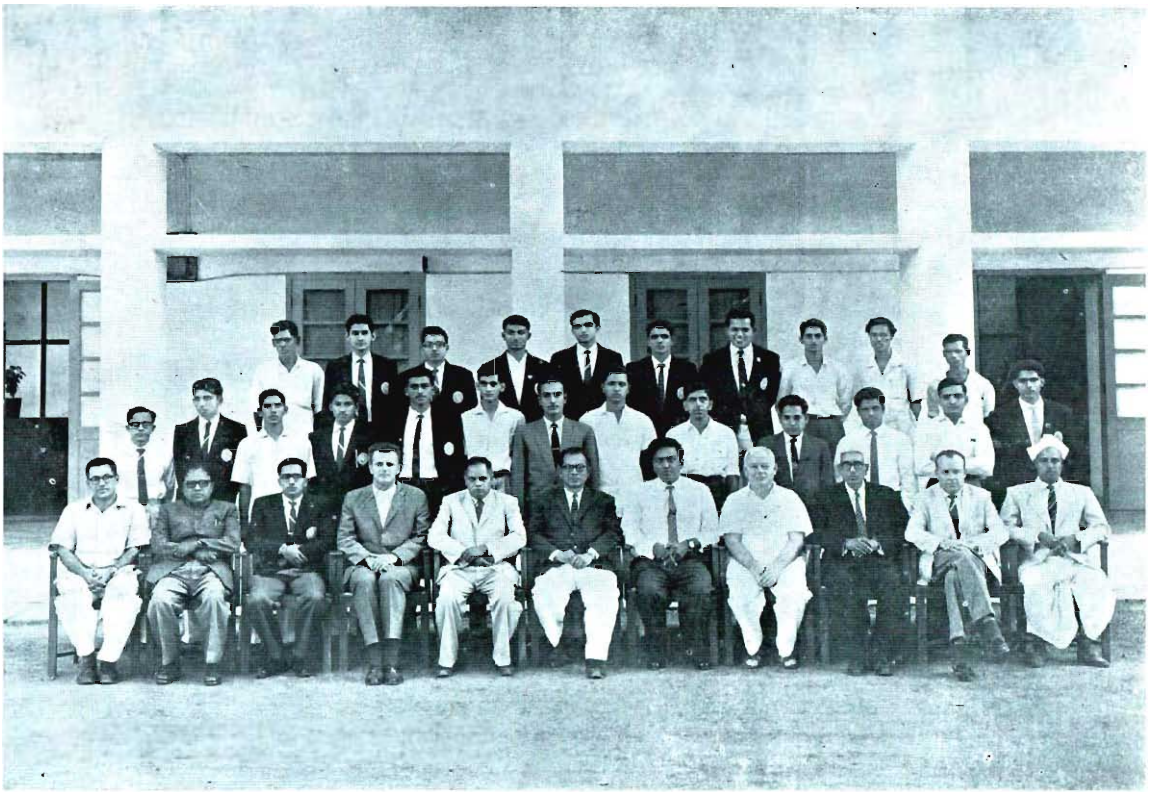
LIONEL PAUL
Sports Secretary.

GYMKHANA COMMITTEE 1963—64

Sitting (Left to Right) : Dr. P. C. Verghese, Dr. M. S. Vairanapillai, Ananda Bhat, Dr. Rouve, Dr. D. Venkateswaralu (President), Prof. B. Sengupto (Director), Shri R. Nararajan, (Registrar), Dr. Koch, Prof. R. Krishnamurti, Dr. Klein, P. N. Parthasarathy.

Standing I-st Row (Left to Right) : Sarvashree T. S. Ananthu, M. Vikrama Rao, Vijay Sharada, Jacob Dominic, S. M. Krishnan, S. N. Bhukht, V. Srinivasan, K. V. Kasturirangan, Dr. V. Srinivasan, J. Joseph, A. C. Gangadharan, V. S. Kumar, P. K. Jacob.

Standing 2-nd Row (Left to Right) : Sarvashree M. Munuswamy, C.V. Sahasranaman, L. K. Sharma, R. Jaikumar, R. A. Vaswani, R. Venkateswaran, Lionel Paul, P. T. Janardhanam, C. Ramu, Muthu.



WARM RECEPTION WITH A COOL DRINK

Photo taken on the occasion of the visit of His Excellency Mr. Walter Scheel, Minister for Economic Co-operation, Federal Repulic of Germany, to the I. I. T. Madras on the 4th of December 1963. The Minister can be seen in the centre.

SHALL WE ?

Photo taken when His Excellency Mr. Hans Lenz, Minister for Science & Research, Federal Republic of Germany, visited I. I. T. Madras on the 30th January 1964.

Picture shows (from left) Prof. Dr. R. A. Kraus, Prof. B. Sengupto, Mr. Hans Lenz and Dr. S. R. Sengupta (Director, I.I.T. Kharagpur.) Shri R. Natarajan, Registrar, can be seen behind the Director.

Prof. K. T. Chandi, Principal,
Indian Institute of Management, Calcutta.

Air Vice-Marshal S. N. Goyal,
A. O. C.-in-C., Indian Air Force, Bangalore.

Prof. Dr. Ing. Felix Eisele,
Technical University, Munich.

December His Exceliency Mr. Walter Scheel,
Minister for Economic Cooperation, Federal
Republic of Germany, Bonn.

Dr. G A. Sonnenhol, Ministerialdirektor,
Federal Republic of Germany, Bonn.

Dr. Henckel, Ministerialdirektor, Federal
Republic of Germany, Bonn.

Dr. F. Fechner, Ministerialdirektor,
Federal Republic of Germany, Bonn.

Mr. R. P. Kaden, Director,
Messr. Calor Emag, West Germany.

Prof. Norton C. Seeber and Prof H. D. Huskey,
I. I. T. Kanpur.

Dr. F. K. Stewart, Secretary,
Commonwealth Education Liaison Unit, New Delhi.

Mr. Bluemenfeldt, Member of the German
Parliament, Bonn.

Mr. E. F. Starke, German Project Designer,
Hindustan Aircraft Limited. Bangalore.

Members of the Estimates Committee,
Madras Legislative Assembly, Madras.

Lt. Gen. Williams, Council of Scientific
& Indnstrial Researeh, New Delhi.

Mr. Hoffmann, German Academic Exchange, Bonn.

Prof, S: I. Molokovsky, Russian Expert in
Electrical Engineering, I. I. T. Bombay.

January (1964)	His Excellency Mr. Hans Lenz, Minister for Scientific Research, Federal Republic of Germany, Bonn.
	Mrs. Lenz
	Prof. Dr. D. Hans J. Jensen, Director Institute of Theoretical Physics, University of Heidelberg, West Germany.
	Dr. J. Pretsch, Director in the Ministry of Scientific Research Federal Republic of Germany, Bonn
	Shri V. Balasundaram, Education Secretary, Government of Madras.
	Prof. R. S. Brittain, Dept. of Mining Engineering, I. I. T. Kharagpur.
	Prof. S. R. Sparkes, Chairman, Academic Working Party, U. K. London.
	Mr. Leonard Marks, Jr. Associate Director, International Centre for Advancement of Management Education, Stanford University, California (U. S. A.)
	Miss H. K. Singh; Asstt. Educational Adviser, Ministry of Education, New Delhi.
	Mrs, Wulthaer, Ex-Secretary of the state for Technical Education, Federal Republic of Germany.
	Capt. R. B. Fanderlinden, Indian Navy.
February	Mr. Cooper, Educational Officer, Institution of Production Engineers, London.
	Prof. Vollmar E. Bergdolt, Purdue University, U. S. A.
	Mr. and Mrs. F. Perkins, Simpsons, Madras.
	Prof. J. Brown, I. I. T., New Delhi.
	Dr. Martin Schmeisser, President, Foundation Committee, Technical University, Dortmund (West Germany).

March Mr. T. Sen,
Rector, Jadavpur University, Calcutta.

Mr. B. D. Laroia, Secretary,
Inter-University Board of India, New Delhi.

Mr. S. P. K. Balakrishnan, Secretary,
V. S. V. N. Polytechnic, Virudhunagar.

Dr. C. C. Schweitzer,
Professor, Free University of Berlin.

Mr. V. Siddharthachary, Consul General of India,
Frankfurt/Main (West Germany)

Mr. P. A. Menon,
Indian Ambassador in Germany, Bonn.

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INSTITUTE GYMKHANA

Members of Committees

Rector : Prof. B. SENGUPTO, (Director)

GYMKHANA : Dr. D. Venkateswaralu (President), Registrar, Member (Ex-officio), Dr. Gerhard Rouve (Member), Shri Y. S. Ramaswamy (Member), Dr. P. C. Verghese (Member) Auditor (Member)

Student Representatives : Sri Ananda Bhat, V. year, (Secretary), Sri T. S. Ananthu, IV year, (Member), Sri S. M. Krishnan, III year, (Member), Sri R. Jaikumar, II year, (Member), Sri Vijaya Sharada, I year, (Member).

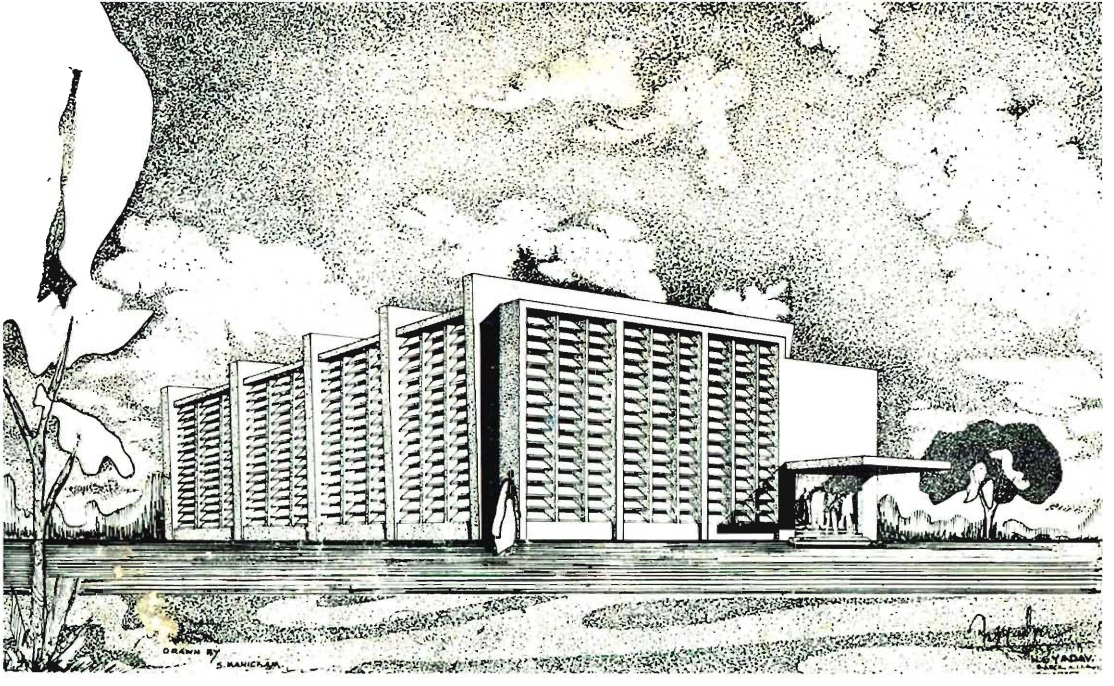
Sports Committee : Mr. V. Srinivasan (Convener), Mr. M. Sarvotham, Mr. P. K. Jacob, Mr. Jacob Dominic, V Year, Mr. Syed Abdul Aleem, IV Year, Mr. Lionel Paul, III year, (Secretary).

Literary Activities : Dr. N. Klein (Convener), Mr. S. Ramani, Mr. M, Vikram Rao, IV year, Mr. R. A. Vaswani, IV year, Mr. K. M. Kripanarayanan, IV year, (Secretary).

Entertainment : Prof. R. Krishnamurthy, (Convener), Mr. A. C. Gan gadharan, Mr. R. Venkateswaran, V year, Mr. C. V. Sahasranaman, IV year, Mr. P. L. Kapur, IV year, (Secretary).

Publications Committee : Mr. G. Viswanathan, (Convener), Dr. M. S. Vairanapillai, Mr. V. S. Kumar, Mr. J. Joseph, Mr. S. S. Randhava, V year, Mr. N. Ramesh, IV year, Mr. Sudhir Puri, III year, Mr. Shah Nawaz Bhukht, II year, (Secretary).

Fine Arts Committee : Dr. V. Srinivasan, (Convener), Mr. K. Mahesh, IV year, Mr. E. A. Olia, IV year, Mr. Lovv Kumar Sharma, IV year, (Secretary).


DRAWN BY
S. MANICHAM
K.G.YADAV.