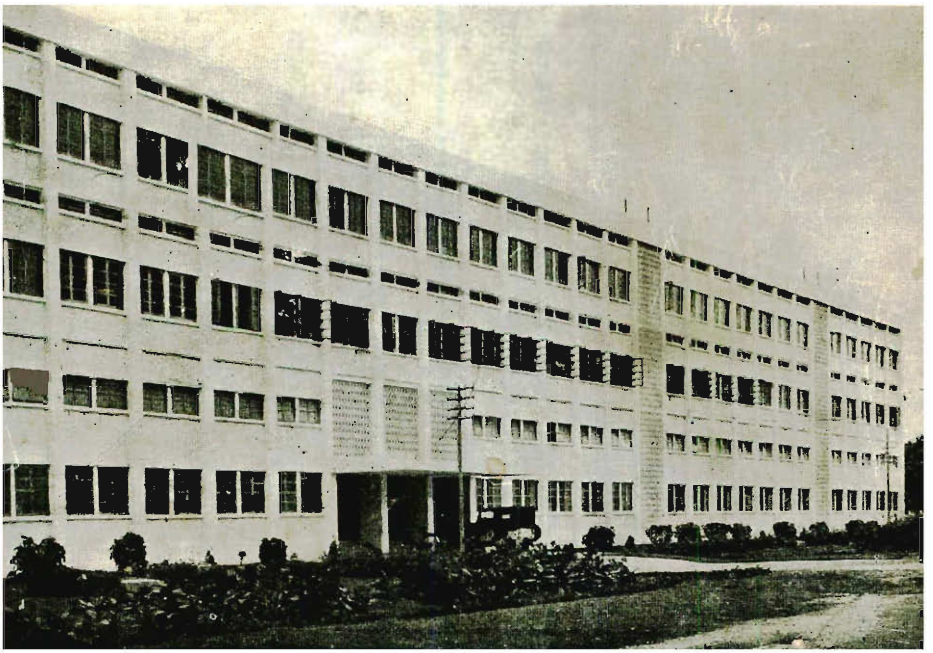


INDIAN INSTITUTE OF TECHNOLOGY
MADRAS

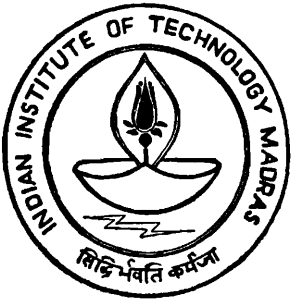
Sixth Annual Number

Front Cover Page — Photograph of the Mechanical Sciences Building.

Back Cover Page — Photograph of the 'OUT' gate of the Institute.

Photos by Ram Kumar Nayar.

1964-65



Sixth Annual Number

MAGAZINE PUBLICATION

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Indian Institute of Technology

MADRAS-36.

SIXTH ANNUAL NUMBER	GENERAL SECTION	CHAITRA 1887 APRIL 1965

The previous issues of the Institute Magazine have recorded successively, the growth of the infant Institute, its groping but always progressive footsteps towards the future, its passing into adolescence—and finally now we are able to record, with pleasure, its graduation into manhood. Two events justify this statement, two "firsts" so to speak. There was the First Convocation which is recorded elsewhere in this issue, in the form of photographs. And then there was the Inter I.I.T. Meet—a "first" insofar as *our* Institute is concerned. The Meet proved conclusively that dedication of purpose could go a long way towards working wonders. Although we only came third, Kharagpur admitted, that our pre-Meet challenge was not a mere boast.

☼ ☼ ☼

The students who are leaving this year have cause to be proud of themselves and the rest of us, in turn, have cause to be proud of them. Theirs has been a class particularly studded with scholars, debaters, writers and sportsmen who, on every front, have won, laurels not only for themselves but also for the Institute. Indeed the hiatus caused by their leaving will be difficult to breach, but we are sure that their juniors will rise boldly to the challenge. We wish the outgoing students all success.

☼ ☼ ☼

Comes a time when reality is wont to confront us like a cold shower on a winter's morning. The Registrar Sri R. Natarajan, who has been so much an integral part of our Campus life, is to leave us

shortly. In certain contexts, outworn cliches have sometimes a habit of jumping to life, infusing with particular meaning the words they qualify. When, therefore, we say that it is with a heavy heart we bid Sri Natarajan farewell, finding solace in the thought that where we stand to lose, somewhere, someplace, others stand to gain—we express our thoughts to a nicety.

The response to our call for contributions has been heartening, particularly from the juniors. This has been positive not only in terms of quantity but also in terms of quality. It is particularly gratifying to note that a number of them are able to wield the pen with an elegance that augurs well for the future. An Institute monthly is run precisely as an outlet to their thoughts. Hitherto most of them have chosen to blush unseen inside the confines of their room. Perhaps the future will find them more favourably disposed.

And finally we have to end on a note of regret. The portrait gallery of outgoing students, a feature introduced last year has to be held over, as the response to our call for photographs has not been adequate to justify their inclusion this year.

Future Sources of Power and Energy

C. Sivaram.

We are living in an age when science and technology have reachep an incredibly advanced stage stage such as to enable man to make a bold bid to venture out into the dark and unknown realms of inter-planetary space. The latest developments in the various fields of science are awe-inspring and point out to the immense possibilities that lie ahead. On account of these rapid developments in the various fields of science and technology in this century the whole face of our globe has been considerably altered. Man has created a new picture of himself as 'Mechanical Man'. He has created instruments and machines ranging in size from the tiny crystal-size transistor to the gigantic radio telescopes and the huge atom smashers like the cyclotron. Ever since the steam engine sparked off the Industrial Revolution and created the Machine age, Man has been constantly trying to invent machines to do most of his work.

Just as man requires muscular energy to do work so also every machine requires energy in the form of heat or electricity to do work. At first man used only coal for the purpose. But as more and more machines were manufactured it became necessary to fiind new sources of power. Oil in the form of petroleum and coal-gas were then used. Then came the electric power age. The dynamo was invented. Machines began to be run more efficiently by using electricity. The modern electric power system was founded by the invention of the AC generator and the steam turbine. Hydroelectric power stations were built which used the potential energy of natural waterfalls. Later the diesel engine became the power source of transport systems.

Man's power needs were never so much as they are today. Today machines do all the work previously done by man. In other words the 'Age of Automation' has begun in full swing. Every day many new factories, vehicles, aircraft, mines, computers and many other machines are being built in every part of the world, particularly in under developed countries. Moreover we are living in the space-age. Huge, powerful rockets are being built for exploring outer space. No wonder man requires an enormous amount of energy to run these machines. At present we largely depend on natural fuels like coal, oil etc. for our

power requirements. But these limited supplies of natural fuel are being consumed at such an alarming rate that it is feared that before long they will be entirely exhausted. It has been estimated that the world consumption of power amounts to something like 5000 million kilowatts per second ! This amount is of course rapidly increasing and keeping pace with the growth of population. So it is quite possible and even probable that within a century or two at the most, all our natural fuels will be completely exhausted. The phantom of fuel famine has started haunting man and his decsendants. Many people look upon atomic energy for solving the problem. But we must remember that although nuclear fission is under excellent control in a reactor, man has so far only a limited control of the atom. Even if man succeeds in control ing nuclear fission completely, the fissionable elements like U-235 or plutonium are not at all abundant. Although efforts have been made in recent years to produce synthetic or artifical fissionable elements like U-233, it is unlikely that nuclear fission is the final answer to the power famine. The rare fissionable elements can easily become exhausted. It can be estimated that in view of the rapidly increasing power requirements of Mechanical Man the fissionable elements can provide the necessary energy for only a few centuries. Another possible source of power is the heat of the sun. This is already being used in many parts of the world in the form of solar cookers and in other appliances like radios, heaters etc. The heat of the sun is unfortunately so very diffused that it is very difficult to utilise it economically on a large-scale What then is the way out of this dilemma and, how can our descendants be saved from the phantom of fuel and power famine haunting them ?

'Nuclear Fusion' says the modern scientist. ' What will be the fuel used in nuclear fusion ?", he is asked. The reply is " Water ! ". In future man will use water as the fuel to run his machines. We will now explain how this is so. Water is of course the most abundant source of hydrogen or dueterium which are the fuels used in nuculear fusion. In the hydrogen bomb, atoms of hydrogen or dueterium fuse under great heat to form helium. That is the process by which our sun derives most of its energy. The thermonuclear reactions converting hydrogen into helium takes place in the centre of the sun at a temp. of 15 million °C. We are thus trying to copy this process on our earth. One ton of heavy hydrogen when converted fully into helium through nuclear fusion will yield the energy equivalent of 10 million tons of the best coal or petrol ! Unlike nuclear fission the fuels used in nuclear fusion are superabundant. Even if $\frac{1}{10000}$ of the heavy hydrogen found in the oceans of the world were used as fuel and even if the world's power consumption increased 10,000 times then also the energy released will last mankind for hundreds of millions of years. Suppose that all the seas and the oceans of the world were filled with such highly calcrific oil like petrol. Even in that case it is much

better to have water as fuel because we would be at least 450 times poorer in latent energy than if we had oil instead of water !

Thus this means that we have found inexhaustible supplies of "firewood" in water. When scientists start burning water efficiently in thermonuclear electricpower stations the phantom of fuel famine will stop haunting man and his descendants.

We have not yet succeeded in controlling nuclear fusion. The reason for this is that the problems to be faced here are far more difficult than those in nuclear fission, which is under effective control in a reactor. One big problem is of course that the temperatures required for such reactions to take place is of the order of several million degrees. It has been estimated that for an effective dueterium-helium reaction a temp of about 300 million degrees is required ! How are such high temperatures to be produced ? Moreover there is no material with which we can build such a reactor for every kind of material (so far as is known) turns into vapour at a temperature of only a few thousand degrees. Recently, great progress has been achived in the problem of controlled nuclear fusion. By means of such ingenious devices like the 'Magnetic bottle' and the ' Mirror Machine ' temperatures of several million degrees have been actually produced ! The problem is sure to be solved by the end of this century. Controlled fusion will bring great and exciting possibilities to the whole of mankind. It will convert the dry barren deserts of the Sahara and the cold freezing deserts of the Arctic and Antarctic into green smiling fields bearing huge reservoirs of food grains, so urgently required by a hungry population. Nuclear fusion will be used in space-ships of the future to propel them into inter stellar space at almost the speed of light !

Nuclear fusion may one day convert the barren planets of our Solar System into places where conditions are similar to that of the earth. This will solve the problem of accomodating the rapidly increasing population on our already overcrowded planet. All this will be achived by the use of the common substance-water! Controlled nuclear fusion is an example of the great boon science can be to mankind if only harnessed for peaceful purposes. Let us hope that man will use his knowledge to create an unlimited source of health, wealth and prosperity to the whole of mankind.

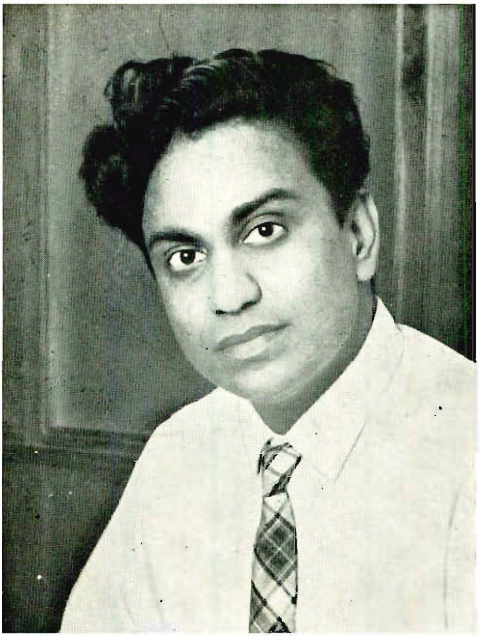
SRI R. NATARAJAN

—A Tribute

John F. Kennedy was only twenty-nine when he won his seat in the United States Congress in January 1947. One morning, soon afterwards, he had occasion to remark: "Some people got into the elevator and asked me for the fourth floor!". Six years later, in January 1953, he was elected to the Senate, and the story goes that, when he first tried to board the quaint little sub-way car that runs between the Capitol and the Senate Office Building, a guard told him: "Stand back. Let the Senators go first." These two incidents were an indirect tribute to Kennedy's extraordinarily youthful appearance, boyish smile, big shock of hair and gangly frame. Sri R. Natarajan, our Registrar, is known to have been accosted outside his office by strangers with the remark: "Is the Registrar in? Can we see him?." And the story goes that at a meeting of the Board of Governors a new member nudged his neighbour to ask, "Who is this kid sitting with us?" The factors responsible again should have been youthful appearance, boyish smile and a big shock of hair!

Sri Natarajan leaves the Institute after 5½ years of close association with it, to rejoin the Government of Madras and to resume his work in the Indian Administrative Service. This has been a memorable period in the life of this Institution. In its sylvan setting, with its impressive material resources, the Institute has the potentiality to become the best of its kind in the country. At any rate, its foundation seems well and truly laid. To this achievement, the Institute's first Registrar has made a distinctive contribution.

Sri Natarajan has set a new pace and given a new meaning to the role of the Registrar in an institution of this kind. He integrated himself into the life of the Institute, in a manner, which is unlikely to be witnessed again. He could not at any time be labelled as a part of the Administrative Unit or the Academic Unit or the Engineering Unit of the Institute. His presence pervaded all of these, and he could reach across barriers without inhibitions, iron out the difficulties where he found them, and restore rhythym and coordination in working. Members of the Academic Staff were welcomed, invariably, with a smile and often with a hilarious remark, and few of them could leave his office without a warm feeling of friendship and good-will for the young man in the Registrar's chair. He struck up a pleasant relationship with the Wardens and the Assistant Wardens of the Hostels, and the day-to-day running of the Hostels and their problems were to him matters of lively personal concern. The student-leaders looked up to him for a kindly understanding of their problems and he fulfilled their hopes by the ready improvisation of acceptable remedies in difficult situations. He brought an infectious enthusiasm to bear on the organization of all the Gymkhana activities–be it in the sports fields or in the



The out-going Registrar Shri R. Natarajan, I. A. S., who is re-joining the Government of Madras, this year.

literary and cultural areas. With his prodigious memory for names, events and personal characteristics, he charmed everyone he came into contact with, and had the capacity, without appearing ever to say 'no', to steer people into his own course for a good cause. He did all this unobtrusively and was able to put across a sensitive, pragmatic interpretation of the principles, policies and aspirations for which the Institute stands and to serve as a bridge of understanding between the Head of the Institution on the one hand and all its major working elements on the other.

It is often said that a civil administrator, however able, will be confounded by the problems of a technological set-up, and only a person trained in science will be equal to its tasks. Sri Natarajan has shown how wrong this assumption can be. He has demonstrated that with robust commensense, a sense of dedication and a spirit of give-and-take, a non-scientist can serve a community of scientists and technologists and achieve notable success.

A gift which guaranteed his success from the outset was his sense of humour. This is considerably strengthened by his facile command of the English language. The Chairman of the Board of Governors, Dr. A. Lakshmanaswami Mudaliar has, year after year, at the Institute Annual Day function, voiced his admiration for these two qualities. These stand epitomized in his much-looked-forward-to, hilarious, annual review of men and matters making up the progress of the Institute. These qualities have been used by him, day after day, in his office, in Committee meetings and in the lobbies, to disarm the most irate critics and to generate in them good-will and understanding. In his conversation, the imagery of Cricket predominates. This is as it should be, because he personifies, by all that he does, the dynamism, sportsmanship and team-spirit-characteristics for which the game is justly famous.

In talking about the main thoroughfares of the Institute—Bonn, Delhi and Madras Avenues—he made the felicitous remark: "I. I. T. Madras, is a Tale of Three Cities". In the unfolding of this tale, especially in all the spade-work that have given, shape and character, to the Indo-German colloborative effort, Shri Natarajan has played a significant role.

There will be genuine regret all round when he will no longer make his daily trip into the campus in his black 'Fiat' and, with a cheery 'hallo' to everyone he meets on the way, begin his daily round of activities with the zest of an opening batsman in a cricket match. He is young, and a long and fruitful official career lies ahead. Wherever his future assignment may place him, he takes with him the good wishes of a host of genuine friends at this Institute. The record of his work here, the spirit of *camaraderie* that he fostered, and the cheer and sunshine that he radiated, will be long remembered with affection and gratitude by the community that will continue to live and work in this erstwhile deer-park now known as I. I. T. Madras.

S. S.

Nehru—The Champion of Peace

A. N. Narayanaswami

The first death anniversary of Pandit Jawaharlal Nehru falls on the 27th of May, 1965. That day will bring back memories of the man who strove for peace, more than anything else.

In the present context of the world with mounting tensions and suspicions, universal peace is not only necessary but also indispensable. For if war were to flare up in our age it would spell the total annihilation of the greater part of the human race. Natures and peoples can only prosper and progress in a climate of peace. To create and foster such a climate, both at home and abroad, Pandit Nehru laboured unceasingly and perseveringly through the years.

Since the dawn of our independence the world situation has been far from happy. The world today is divided into two rival power blocs, having diametrically opposed and conflicting political and social ideologies. Both camps are arming themselves to the teeth, openly and at times surreptitiously with all the weapons that science can offer. Realising fully the explosive international situation which on different occasions has erupted openly in different parts of the world, India has pledged herself to co-existence and non-alignment with either of the power blocs.

In his Herculean attempts to avert war and foster security, Pandit Nehru enunciated the doctrine of *Panchashila* or five principles for the promotion of world peace. This doctrine is an extension onto external affairs, of India's glorious traditions, her history and her philosophy of tolerance and non-violence. At the outset it was scoffed at and ridiculed but today there is a growing awareness, even in countries which are not well disposed towards India's attitude in world affairs, that the role she has played was the only one she *could* have, consistent with her own security and what is more, in the interests of world peace.

The greatest contribution that Nehru made to international peace was his doctrine of co-existence. He realised early in his career, as foreign minister, that the only way to peace was the lessening of tensions betweed different countries and establishing good will and tolerance between them A gentle and dignified approach, even in matters where he felt strongly, was adopted by him rather than an angry and violent approach, with the result that he succeeded where

others failed. This was the Gandhian technique. He illustrated it constantly in his approach to Pakistan. No country could have taxed his patience more or put his belief in this doctrine more to test, than this country. With the leaders indulging in anti-Indian propaganda, with perpetual border troubles, with the temper of the people raising, Nehru kept preaching restraint and patience in dealing with Pakistan. Such a policy somewhat eased the relations between the two countries.

As a corollary to his doctrine of co-existence was his principle of non-alignment. Alignment with one of the power blocs only increases tension and conflicts. By being uncommitted a nation creates a climate of peace and the more a nation is uncommitted, the greater will be the climate of peace in the world. It was because of this that Nehru set his face against all military pacts and alliances. He refused either to be persuaded or coerced into taking sides. He knew, how intense Indian need was, for foreign exchange and personnel, to change over from an underdeveloped country to a prosperous one.

Pandit Nehru's service to the cause of international peace and harmony are very important. He took a leading part, directly or indirectly in efforts which brought about a cease-fire in Korea and then in the settlement of Indo-China problems. He sponsored the admission of a number of countries to the U. N. O. including Red China. He also tried to bring about a ceasefire in Algiers and a peaceful settlement of India's disputes with Pakistan, China and France.

As a messenger of peace, he visited all the important countries in the world, building a reservoir of goodwill, understanding and affection. As a result leading statesmen from all over the world have come to India on missions of goodwill and co-operation.

There is also another side to the picture. Did his policy secure that which is essential to the good of India? Relations with Pakistan, our neighbour to the East and West, continue to be unfriendly. The continuing trouble over Kashmir has damaged India's reputation in some parts of the world causing her to be regarded as hypocritical. The aggressiveness of Red China occupying our border areas, has by no measure or means been checked.

Though his policies were not too successful, Nehru stood as a lone champion of peace in the world. His only preoccupation was to save India and the rest of the world from war. War could only bring destruction. He strove very hard for survival, stability and strength among nations. This alone could usher in an era of peace and plenty.

The City-Bus Ride

V. S. Kumar

There is nothing I enjoy more than a bus ride. For all its discomforts it provides such comic relief as you can find in no other place. Anyway I do not propose to look at the harrible side, since I have to bear with it day after day, morning and evening. Imagine living in horror all your life! Instead I look on the bright side and what a richly hued comedy it presents! When I was a novice, fresh from the country, what ill-luck I had to get into a city bus! Not conversant with the routes I would rush to get into every bus that stopped and the conductor would invariably inform me that I had got into the wrong bus and put me down at the next stop, to join again the tail end of a long queue. It got so that I used to feel thankful if the conductor did not abuse me or ridicule me in front of the snickering audience; if the conductor kindly issued me the minimum ticket and the correct change. Next I adopted the technique of asking the conductor, before getting into the bus, if it would take me to my destination. The answer usually was either "no" or "I don't know." Another favourite with the conductors was and is "take the next bus." Another foolish endeavour of mine was to seek the help of co-bus-catchers. How they used to confuse me! One would say catch eleven, and another would suggest twenty-five while yet another would condescendingly tell me that I was at the wrong bus-stop and should take the first right lane, reach another main road and wait at such and such bus-stop at X Cinema theatre! But I am wiser now. I know which bus-stop to go to catch which bus and where that bus would take me. I have now learnt the art of getting into the queue within the queue. I have also acquired the technique of getting my feet first on to the foot-board and clutching, with all my strength at the inconvenient hand-rest provided at the entrance. I also know how to wedge myself between the body of the bus and the barring conductor and wriggle through inside. I am yet to become proficient at running with the bus and heaving oneself into it.

However getting into the bus is a problem of the past. I now devote my full attention to the conductor and also the great art of securing a seat without appearing to be too aggressive. I have come to know some great conductors and some great seat-snatchers.

First the conductors:—In them I see all the humours that were once attributed to men. I have come across the sanguine, the choleric, the phlegmatic and the melancholic; broadly speaking. There are the

polite and the impertinent; the loquacious and the silent; the jolly one and the gloomy one; the violent and the meek; the romantic and the peevish; and of course the fast and the slow. I know one who bristles with anger and such is his brusque manner, and such the radiation of his anger that passengers do not argue with him. What more they positively try to cheer him up, of course, without any success. He snarls, and snarls especially at the womenfolk, that I wonder why he doesn't burst a blood vessel.

There is a sob sister I know who harangues the passengers at length about his woes, until one believes that his is the most miserable lot in the world. But a few of us have found out that it is only a facade he puts on, for we have found him living it up and the very life of jollity in his off hours.

Then there is the conductor with the profile. He so much resembles a popular star that people go on staring at him. He is, very fortunately, a jolly type and excellent company. Never have I had to bury my head in a Perry Mason paper-back when I travelled in his bus. He is so cheerful that he literally contaminates others. Every passenger to him is a potential source of jokes and his jokes are so irresistible that even the victim joins in the guffaws. He is so even tempered that it is is difficult to be angry with him even when he is a bit impudent. To cap all this he is also musical. Never will you hear the monotonous whistle in his bus. He is an extremely melodious cuckoo-clock, and I eagerly await the next bus-stop to catch "his whistle". He literally whistles his way through his arduous profession.

And now the seat snatchers. These are in a class by themselves. Here is how you can detect them. They are more often than not very un-obtrusive and rarely arrest one's attention. They simply slide by like a slippery eel through a pack of sardines. They have an uncanny intution that tells them which seat is going to be vacated at the next stop. Standing ready, they simply fall into the warm seat emptied the previous moment. Neither a murderous glare nor an appealing eye budge them from their hard won seats. Their skill is an art and I always respect art, even while I am being battered between hurrying passengers, like a punching bag hanging precariously from a slippery leather strap.

I wish these columns allow me further to enlarge on this theme for I have many more subjects to cover. What about that hardy species the bus driver in whose hands we deposit our lives for the duration of the journey? And than there is the garrulous passenger whose existence adds to the misery of the poor commuters. I can write volumes on the passengers who always flourish currency notes and never bring correct change to aid to the duration of the journey by forcing the conductor

to stop the bus on the way to issue tickets: they are a regular menace and only aggravate the already exhausted conductor and the anxious passengers. The ladies, of course deserve a special chapter. It will, for now, suffice if I mention the tenacity of the meal carriers, those fragile looking women who balance on their heads out-size baskets containing innumerable tiffin sets. The conductor and most of the passengers always get wild with them but to no avail. I hated them too, but now I defend them, for if they miss the bus I have to miss my meal!

Pleasant or not give me a bus ride any time. I can now and then, afford to miss the bus but never would I voluntarily miss the fun a city bus provides.

Walking in the Rain

The initial fear over
Bracing like an athlete
Warming up, breathing deep
The sensuous perfume.
Lips pouting, catching
A stray drop, bright pearl
Peering through watery criss-cross
Soft, blurred shapes, blue-framed.
Shaking like a purring pup.
Cavorting through fast-filling puddles,
Wondering at the washed green foliage
Heavy and ripe like a pregnant woman.
Blind for a moment : the lightning.
The thunder, rattling the bones.
Where are all the birds?
Hiding there and there and there
Poor things, so tiny and fragile;
Will that accommodating tree fall?
Good gracious, a motor car?
Curse you, all this mud spray:
Run for it, there is the coffee house
No there's the bus, work to do.

(V. S. KUMAR)

The Other Hand

Ranjit Puri

The fury of a storm lashed out at a small town in the South of India. The wind moaned as it tore through the desolate Cypresses; a thin, cutting drizzle beat against the glass panes of a certain house, rattling them. Inside the house, evcrything was solemn and deathly still. Thc bedroom was the only room from which a faint light could be seen coming out. In it was a boy, scarcely grown into a man. He died that night.

They all thought that he died of an illness: his friends, his parents and even his doctor. But I knew better, oh yes, I knew. For was it not I who had murdered him?

My ordeal started one warm summer night. I was spending the evening out with a friend. We saw a play and then dined out. We popped into a soda-fountain before going home. We were enjoying ourselves thoroughly when all of a sudden I felt my right hand turning cold, and felt as if a whole lot of needles were pricking it. At first I thought it had "gone to sleep" due to the lack of blood circulation in it .Then, to my utter horror, I realized that it was irresponsive to my will; I could not use it! It wasn't my hand any more; with a siek feeling of horror and impotency, I saw it seize my friend's ice-cream dish and upset the gooey fudge into his lap. There was a painful silence for a mo.nent, during which the feeling returned to my hand. Then he jumped up and walked out very fast, and I went after him, embarrased trying to sort things out in confused and inarticulate sentences Thinking over the incident later and reconstructing the scene, I realized, much as I wanted to discard the thought, that when that bizarre feeling came over my hand, it acted by correlating my subconscious thoughts of "ice-cream" and "clothes" (for those were what I was thinking of at that time) and acting in some queer way upon them.

I slept but little that night, tossing and turning far into the uncomforting small hours of the morning. At the breath of dawn, I wheeled my bicycle out with the intention of going to a doctor, although even then I knew that no earthly treatment could chase this hideous thing from within me. I cycled furiously, always thinking of picnic, repeating the word over and over again in my mind, trying not to think of the doctor, hoping that my apparently telepathic hand did not anticipate my actions. It was of no use. Apparently, I could not keep the thought of the doctor from my subconscious. For suddenly

I felt sensations similar to those of the night before, felt my right hand turn the handle-bar of my bicycle so that it pointed towards the road, with me looking on dumb-founded. It would have been my end had not the driver of a car jammed his brakes on in the nick of time. I lived; but why did I not die then, than live a living death and be doomed to suffer untold misery ?

In the days that followed, every hour seemed an eternity. I dread to think of those days during wnich I lived in trembling fear ; for one moment I would be a perfectly normal person, the next a dangerous sadist. I noticed these occurings were becoming more frequent and more dangerous. I locked myself up in my room, day and night, sneaking out occasionally for food, lest I should do others greivous harm. It occured to my hand to take me out and during those ventures, I did considerable harm to both people as well as thing. Once I strangled a kitten. How imploring those eyes looked when it struggled for the last of its living moments ! Then I set fire to a hut. Would I commit homicide next? I dreaded to think to think of my future. Was I not a raging maniac in the eyes of all Humanity? Yet no one caught me.

Then a day came when my unfortunate friend came to inquire about me. I entertained him normally, except for the fact that my nervousness must have struck out like like a sore thumb! I was absolutely certain then that he would think that I was ill. He would call a doctor. Should the world known about me? I would never bear to be treated in a lunatic asylum. Never. These thoughts raced through my oppressed brain.

I poisoned him.

Or did my hand do it ? I read of his postmorten in the papers, of the startling discovery of the doctor who suspected foul play. The Police Commissioner, as usual, claimed that they "had a clue, and hoped to arrest the murderer before long ".

As I sit here, a cyanide tablet at my side I think of the alien, telepathic thing that has possessed me. It will sense the presence of the poison and kill me as I have killed another. Fair justice, indeed ! They'll come to get me, but by then I would have been murdered by myself ! The law will have to think up a new term for it - quasi-murder would be a good one.

Even as I feel my hand turnd turning cold, I hear the harsh sounds of a police siren. So quick ? Yet I am calm.

Shouts.

Footsteps.

Come quick, Death. I feel th.....

THE FILM CLUB

M. Menon

Of all the I.I.T. Associations,
The Film Club is one which nobody shuns,
You could also a member be,
For a small sum of one rupee.
In one's mess bill this sum is found,
Here to grumble the payer has no ground.
With great eagerness the students wait,
For isn't it less than the outside rate ?

Ah! At last its the long awaited Sunday evening,
The students are so gay that they almost sing,
Into the open air theatre in twos and threes,
The students rush in like a swarm of bees,
At the stroke of eight the lights are off,
The silence is broken only with one or two coughs,
All eyes are glued to the portable screen,
On which a rectangular patch could be seen,
But alas! The patch is white in colour,
What happened to the picture all of us wonder,
Obviously there is no film in the projector,
A fault overlooked by our operator,
With a slight delay the mistake is rectified,
By which the annoyance of the audience is nullified,
If its a Western, the students are often tense,
As they watch the fights between the tough gents,
But if its a romance the audience begin to murmur,
For after all isn't everyone a potential lover?
Half way through there is no sound,
It will be some time till the fault is found,
Whistles and groans rent the air,
Perhaps this is more, than what they can bear?

To the projector the operator gives a kick,
Often this is effective to revive the flick,
If not the picture is usually postponed,
The operator is lucky if he is not stoned,
Finally with all the interruptions the picture ends,
People begin to say good night to all their friends,
Join the film club to have some fun,
You always get it the way its run!

Sir Winston Analysed

T. S. Ananthu

Sir Winston Churchill is no more. His name, everybody agrees, shall go down in History, for he not only wrote history and understood history, but also created history. But not everyone is agreed on how and in what form it shall go down—as a champion and defender of freedom, liberty and democracy or as an imperialist denying freedom to Britain's colonies. Opinion on this question differs widely. He is regarded by a grateful British people as the man who steered Britain through the direst peril of its history. His inspring leadership in defiance of totalitarian Tyranny, there is no doubt, saved Europe from Fascist domination, and all those who fell or were about to fall a prey to the Nazi regime shall regard him as one of the greatest freedom—fighters who saved this world from Hitler's ruthless dictatorship. But there is the other side of the picture too, and not all people, particularly those in India and other former British colonies, will agree that Sir Winston always stood for freedom. Many in India consider him to be the principal force that refused us independence for decades. "I have not become the King's first minister to preside over the liquidation of the British empire" is still quoted disapprovingly. He was the person who called our Father of the Nation a "naked fakir". And if to Indians he seemed a diehard, so too did he, later, to President Roosevelt.

It is perhaps fitting that, for a man of many parts like Churchill—he was in turn a soldier, journalist, hisiorian, lecturer, author, statesman, painter, and politician—there should be a variety of opinions, too. But Churchill's approach towards various problems is not that enigmatic and contradictory as it seems on first sight. A careful analysis will show that Churchill was, all said and done, basically a dogmatic conservative with an aptitude for fighting. This analysis may seem rather odd at first reading—particularly to those who have confined their attention to his exploits in defence of freedom and have ignored his attitude towards the colonies. But a careful analysis of his life history will show that each and every one of his thoughts and actions can be very easily explained if we assume that his two basic instincts were dogmatic conservatism and the fighting spirit. Let us examine each of these of these factors, and how they affected his thoughts and controlled his actions.

Churchill's association with the Conservative—except for his short honeymoon with the Liberals when in the early part of this century, he sat in the Tory benches throughout his long Parliamentary

life of our 60 years—is in itself symbolic of his basic love for Conservatism. In fact, curiously enough, his love for freedom and democracy can also be accounted for on the basis of his conservatism. The British, for centuries, have cherished democracy and Sir winston, born and bred up in such an atmosphere, also fell in love with democracy on account of his conservatism. extreme conservatism, however, took him farther. He belived, as every true conservative does, that the state of affairs in Great Britain was the best' and must be conserved, Hence his advocation of the supremacy of the British parliamentary system over other types of democracy, e. g., the American Presidential system. In fact, it was his conservatism that prevented him from acknowledging that British democracy could survive without the seemingly redundant post of the Monarch. It may be mentioned in this context that, while Sir Winston was a champion of democracy, he was one of aristocracy too. And the atmosphere in which he was brought up—an atmosphere he wanted to preserve—was definitely aristocratic. In short, that most of his ideas and beliefs emanated from his conservatiam,

Churchill's conservatism was essentially dogmatic. This was strikingly, if incongruously, projected in his stubborn attachment to the concept of imperialism, particularly in its relation to India, when it was clear to many others, including a majority of his Tory colleagues, that the concept was outdated. In certain situations he was, as Asquith once described him, a genius without judgement. He just could not understand why people wanted changein any existing situation. Britain was a free country, and Sir Winston wanted to conserve the freedom But India was not a free country, and he saw no reason whatsoever why Indians should be given freedom. Even in Britain itself. Churchill has been described by no less a man than Aneurin Bevan as "Petrified adolescence", He was against practically every reform, against the suffragist movement, against political reforms for India, against Labour legislation.

But a description of Sir Winston's personality remains thoroughly incomplete if it does not mention the excellent fighting spirits that he possessed. Scores of Conservatives have come and gone in this world, but who has made an impact as deep as Churchill's ? What is it that makes Churchill stand out among all diehard Conservatives ? Undoudtedly, his fighting spirit. Churchill's vibrant, turbulent imagination tended to see most things in terms of battle and instinctively rose to the challenge. In that sense his life was a battlefield, or, more accurately, a succession of battlefields. It is perhaps this instinct to fight that prompted his entry into the Armed Forces early in his life. His fighting qualities were well demonstrated

in his adventures as a soldier-cum-war correspondent in Africa and India. But his career as a soldier was distinguished by a dogmatic self—confidence which never hesitated its criticism of senior officers. So he fought with his commanders, and resigned his commission. He returned home, and was elected an M. P. on a conservative ticket. But very soon he was at loggerheads with the party leaders, and left the party. On rejoining it later, he once again became a bitter critic of the Conservative government from the Conservative benches. When he was Colonial Secretary, only the tact of a British Commander prevented a-head on collision with Turkey's Kemal Pasha. And finally, of course, he fought with Hitler. In fact, Churchill's life has been full of fights, When on quarrel ended, he picked up another. A beautiful example is his famous speech at Foulton, immediately after the Second World war, when he denounced his erstwhile ally, the Soviet Union, and coined the term 'Iron Curtain'. Perhaps the conflict between the Western Powers and Russia was inevitable, but Churchill's speech, coming so soon after peace had been established, was definetly premature. It was instigated by his basic desire to keep fighting with someone or the other. And not only did he fight valiantly with human beings, but with Death too. Not once, but on several occasions, he drove away Death which literally knocked at his doors in Teheran in 1943 and at Monte Carlo in 1962. He managed to keep death at bay for ten days in 1965, too, but the inevitable occurred on Jan. 24.

Thus we see that each and every fact of Churchill's turbulent, exciting and thrill - packed life can be explained on the basis of his two basic qualities—namely, dogmatic conservatism and the fighting spirit. Perhaps the people who best understood this were the Englishmen themselves. In this modern, moving, revolutionary world, they refused for years to accept the conservative, dogmatic Churchill as their Prime Minister. But when Britain faced its greatest moment of crisis and national danger, they looked almost instinctively to him for guidance, inspiration and leadership—on account of his third quality, namely, the fighting spirit. True to his character, he led them with the words "We shall not flag or fail; We shall go on to the end. We shall fight in France, We shall fight on the seas and oceans ..... We shall fight in the fields and in the streets. We shall never surrender....." But once the fight was over, Englishmen knew that Churchill's services were no longer required. They knew that he was not the man who could do justice to the changing tides in India and other colonies. And so they rejected him in the elections that followed immediately after the Second World war. In fact, Churchill was indeed very lucky that the war broke out when it did, for otherwise his political eclipse would have occurred long back, and he would not have become a legend as he is today.

In conclusion, it might be interesting to have a glance at Churchill's own assessment of himself. The following are his words written on the flyleaf of each volume of the history of "The Second World War" :—

In war : resolution

In defeat : defiance

In victory : magnanimity

In peace : goodwill

In the first two he was hundred percent correct. In the last two he was far from the truth. The division of Germany (in victory) and the Foulton speech (in peace) will be some of the many instances in which History, too, shall record its dissent.

Stroll by the Sea

Summer rush, parched throats,
Gasping breath, soft drinks, more thirst
Dragging feet, wind-blown sand,
Picnic debris, half-buried : scurrying Crabs.
Moist dank, bark drown like Chocolate,
Phalanx of waves pounding, breaking up
Cool spary, salty tang, deep breath.
Squealing children, galloping dogs,
Sand castles, tiny, stamping feet, outraged cry.
Calm again, vaccuum like, a private silence.
Beckoning waves, tossing catamarans :
The mighty and the brave; not paying
Invisible horizons drowned in sheet waters,
Silent lands whispering inaudible sounds.
Unending hush, a deep lullaby,
A sad chorus of the marine family ?
Hawker's cries scattered by breeze,
Invoke strange thoughts; misty?
Darkening sky : a painters dream.
Throbbing lamps, thinning retreating crowds,
Onrushing waves, white spray sparkling
Smell of fish, visions of food, a sigh

(V. S. KUMAR)

Women's Education in Germany

Hildegarde Rouve

It was just a few weeks ago that I had to suffer quite a shock : I was requested to give a contribution for the 'Annual Magazine'. If ever, you in the Campus, have tried to understand these post-World War II products from Germany, these children of the so-called Economic Miracle etc., who have been living with you now for a number of years, please try to understand the continuous surprises that are sprung on them, putting them to confusion. Here at least was a minor one : what subject to write on for readers to whom we are virtually strangers?

But before that, my very first idea was to explore why I was asked to write at all. A few possibilities occured to me :-

(a) Some pages still vacant and we don't want to publish a volume smaller than last year.

(b) It seems she likes to chatter (akin to all women) about any old thing.

(c) In any case a few Germans are living here-let them also have one page (I am afraid it will come to more than one).

(d) .....

(e) It seems my article 'Christmas in Germany' was appreciated and the idea grew out of this. The article was a mere collection of facts.

With the weak logic, natural to women, I concluded that I should bring together another collection of facts. To this end, I started a thorough investigation of technology. humanities and last but not least (as I learnt in I. I. T.)--administration. But please don't ask me the results!

However during the course of my "investigations" (conducted right through lunches, teas, dinners and receptions) I met a lady, who instead of losing hereslf in abstractions, had something practical to

suggest: "why not", she said, "write on 'Women's Education in Germany" ?.

In deference to the suggestion of this knowledgeable woman, I am going to deal with this subject.

In Germany legal equality is guaranteed to women in all spheres of life. This has been achieved gradually since the middle of the last century through the intense work that was done by the so-called Woman's Movement. Notwithstanding the devotion of many eminent women working for the improvement of the women's situation, substantial steps towards emancipation were made possible by changes in society and women's positon in it. This change was mainly brought about by the fast industrialisation. Women were needed more and more as active participants. The natural consequence of their absorption into the industrial process was their claim of :

1. Right of education.
2. Right of work.
3. Right of participation in public life.

At the end of the last century the brighter girls could pass their matriculation and enter Universities. The right to vote however was given to them only in 1918, after World War I. Up to that time the only professions open to unmarried women, who had to earn their living or simply wanted to do some work, were practically that of a worker, helper or on a higher level, that of a nurse or teacher. Any political activity was simply unimaginable.

The demand of these three basic rights gives answer to the question: 'Why education for women at all' ? Now quite a number of persons (men and women) believed that the only place for a woman was her house, a place that she should keep in the best of all orders and where she has to bring up her children and to provide comforts for her husband. This idea was propagated with vehemence during the National Socialistic period, the only mistake being that at the end of the war women had to take up various rather difficult and hard professions, vacated by the then soldiers.

Naturally, I understand that it may come as a shock to some men that a number of women may know as much as they do - on certain fields certainly less - on a few, perhaps more. But any intelligent man must soon recognise that women will ever interfere in evrything-be they educated or not. So don't you think it is better to give them the chance to understand in what they interfere and how they do it ?

Starting from the age of 6 or 7, children have to attend primary school. 8 years of schooling is compulsory for each child—either completely in primary school or 4 years of primary school and 4 years of middle or secondary school. Though durlng the first three years after the end of primary school it is again compulsory that the children continue attending classes at least once a week, it has been generally recognised that a girl of the age of 14 or 15 is mentally and physically not prepared to enter an apprenticeship or even an earning labour. In a few parts of our country it has been decided to extend primary education for one and later two years. However Lacking sufficient teachers and schools it will take some more years to realise this idea.

About 80% of the girls leave the school after these 8 years of primary education. With this basic knowledge they may start either as unskilled workers or take up an apprenticeship in the various crafts, in officeworks or as shopgirls. Apprenticeship will take two to three years and as the girls earn only a small amount during this time, many of them decide to start earning immediately as unskilled workers. 'They wlll get married in any case-why then invest too much in their education ?

As there is a big demand in many spheres of officie work, salesmanship and manufacturing trades (especially for girls) an interested, intelligent and skillful girl has good scopes. For example steno-dactylos, shop-assistants, workers for the manufacturing of precision instruments or watches etc., are mostly women and the lack of young male apprentices is opening new fields for girls in quite a number of crafts and trades. So, for example, in a barber's shop you may have a shave or hair-cut done by a (let's hope!) pretty young girl, though this was rather unusual just a few years back. More and more, young men are prefering to take up industrial jobs, connected with mechanics. The gaps have to be filled by girls.

At the age of 10 or 11 those girls who intend to do further studies have to undergo an examination that opens up the possibility of attending an intermediate or secondary school. The aim of the secondary school is, to lead after 9 years, to the 'Abitur' (Matriculation) and to provide the furture University students. Those, who from the beginning don't think of taking up higher studies - and are not held by social prestige to 'have the Abitur' will chose the intermediate school. In 6 years it will impart a good all-round knowledge with emphasis on modern languages and the first grades of the natural sciences. The conclusion of this school period will open up the possiblity of entering all professions except those which require academic studies. Many vocational training

schools will give them further training for social professions, administrative service, scientific assistant work, and so on.

The secondary school that leads to the matriculation (only one third of those who enter succeed finally) is not a uniform school type. The types differ in the empahsis either on old languages (Greek and Latin) and humanities or on modern languages and mathematics or a combination of both. that means Latin plus modern languages plus mathematics. The standard is high and the regulations strict. 14 subjects are compulsory, of which four are main subjects. (Latin, English, German, Maths and History, Geography, Political Sciences, Chemistry, Physics, Biology, French, Sports, Handicrafts and Design, Religion.) Generally there are 6 classes (of 45 minutes) during the morning (they start at 8 a.m.), while the afternoon is reserved for extensive homework. The last three years require a good deal of mental labour (changing in its intensity naturally from case to case). If compared to the Indian College-System: A matriculate has to reach about the level of a B. A.

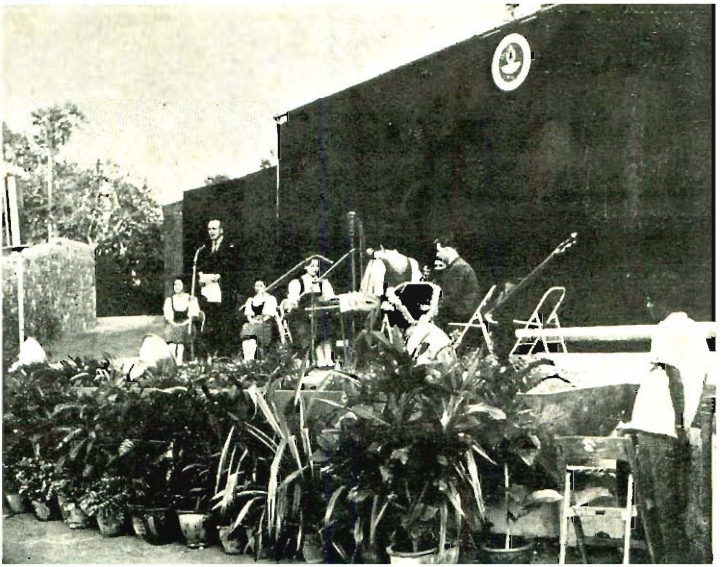
No wonder that, with their head full of spherical trigonometry, irregular Latin verbs and awkward chemical combinations the girl students can't spare much time for, say, the art of preparing a lunch. I remember very well, how, during the last years of my school most of us were fascinated by the miracle of one girl who really was able to produce an eatable cake and to stitch her dresses! Those who didn't know that, but knew more about maths, found therein a certain satisfaction. 12 years later the mathematic stars end up as nothing more than good housewives, whilst our weak-legged mathematics girl is not only a good housewife, a smart lady, the mother of two sweet babies, but also a recognised pediatrist.

Matriculation is completed at the age of 19 or 20. The decisive step for Higher Education is taken. Sarcastic observers may call this the decisive step for fanging an academically educated husband. A few will fall to this temptation and choose one. A few will start the training for a profession that they could have had without matriculation. A few only, but in any case as much as one fourth of all enrolled students in German Universities, will enter University. The prefered departments are arts and social sciences, Medicine, pharmacy and chemistry, natural sciences and economics. Though concentrated in those fields mainly, you will, however, find at least one girl in evey remote corner of University education.

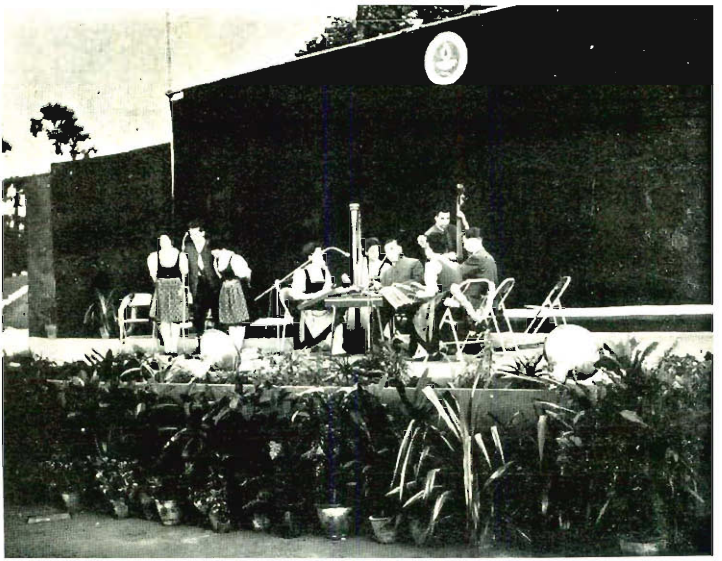
The change from the strictly regulated school system to the absolute freedom of academic education creates some difficulties, especially for

girls. It is up to them to decide what different courses to take. They are free to choose as to whether they want to attend classes or study the subject by themselves at home; this with the help of books only. They are also free, after a minimum required time, to enter examinations if they feel fit. Laboratory tests and seminars offer other possibilities for them to 'find' education (and not vice versa!). This is a system which offers quite a lot of independent choice and studies and a certain amount of initiative.

And if on the way they don't happen to meet the 'only man in the world' and interrupt their studies halfway, they will become these independently thinking and acting doctors, lawyers and scientists that you will find – perhaps not in great numbers – but certainly everywhere in public life, parliament, hospitals, schools, industry, universities.



Dr. N. Klein introducing the folk musicians from Bavaria, who performed in I. I. T., Madras.



The Loepfl family Trio (*Left*) and the Toni Goth Sextet (*Right*), giving a number.

Members of the troupe from Brigham Young University, Utah, U. S. A., who visited I. I. T., Madras.

Members of the troupe giving a rollicking item.

THEY CAME, THEY SANG, THEY CONQUERED.....(part II)

(Photos: V. Srinivasan)

Marvel From Mangalore

R. Natarajan, I.A.S.

It was the 1960—61 willow session. Richie Benaud and his men were on the rampage, putting Indian cricketers to the sabre. They had won the Delhi Test by an innings and the Indian victory at Kanpur had been dismissed as a freak of result, a flash in the pan--some weird magic from the pages of an Oriental myth. Davidson and Meckiff, Benaud and Kline, who had all preyed on English batsmen to perfection in the earlier Fight for the Ashes, were still accepted as invincible, ogres in the art of bowling. The Australians were determined to avenge Kanpur at Madras. The stage was, thus, set for the fourth Test at the Corporation Stadium.

The Aussies made no secret of their intentions. After a match winning total on a bowler's wicket, they waited for Ramchand & Co. to take their sorry stance at the wicket, or as they thought, to place their hapless heads on the guillotine. This did happen. Indian batsmen floundered against the scorching pace of Davidson and Meckiff and the wily spin of Benaud and Kline. Wickets tumbled and the Test atmosphere was tense. Standing out from all this dismal debris was Kunderan—the only Indian batsman to sound the call of battle and the din of challenge. He tamed Meckiff and vanquished Davidson. Benaud too had to doff his hat to Kunderan's blade. His two audacious knocks of 71 and 33 runs, came out as an invigorating breeze in the sad and sullen Test atmosphere, reeking with one-sided superiority in Australia's favour. Kunderan was, overnight, a darling of the crowd.

The lithe, athletic Budhi Kunderan was born at Mangalore on Oct 2, 1939. After his parents migrated to Bombay more than two decades ago, the sporting life of the metropolis took a happy hold of him. Both at Bandra High School and Jai Hind College, he distinguished himself in cricket, foot ball, athletics and boxing. He captained the West Schools team in the Cooch-Behar trophy and represented Bombay University in the Rohinton Baria tournament. Kunderan was also lucky to have the benefit of Cricket coaching under Homi Vajifdar during his formative year.

But it was not till he joined the Railways that he had his big break. With his usual, unnerring eye, Amarnath, the Railways coach, spotted Kunderan as a potential Test Star. He gave him invaluable batting tips and persuaded him to take to wicket keeping seriously.

Quick to spot talent and quicker still to put it to test, Lala Amarnath, as the Chairman of the Test Selection Committee included Kunderan in the third and fourth Test matches against the Australians—with what electrifying results we enduringly know.

For a matter of wonder, Kunderan had his Ranji Trophy baptism after his thundering entry into Test Cricket. Though making sizable scores in Ranji Trophy matches, he was not given too many chances to play. He played only off and on in the Tests against Ted Dexter's England. The story was much the same against the West Indians in the Caribbean. Engineer, a tidy wicket keeper and a useful bat, managed to keep the spotlight on himself and be an automatic choice as Test keeper–till the Madras Test against Mike Smith and his men in January, 1964.

It is curious to reflect how accidents play so prominent a part in moulding the destinies of individuals or for that matter, nations. If there was one man determined to take the tide at the flood and lead himself and his team to fortune on that cool January morning of the opening day of the Madras Test, it was Kunderan. When Engineer could not play owing to indisposition, Kunderan promptly took his place and opened the Indian innings with Vijay Mehra. Prophets of doom, settling down snugly on their seats with packets of popcorn, freely forecast that Lightning Larter and the Essex Knight would soon pulverise Kunderan. But it was Kunderan who pummelled them! With strokes straight from the smithy, Kunderan scattered the field and gave Mike Smith's brow the "Napoleon at Ratisbon" effect. Larter and Knight, Titmus and Wilson came alike to him. and were made to look second grade bowlers in high school cricket. He had 170 runs against his name and dynamism. It mattered little whether Kunderan's feet were not near the pitch as defined in the Cricket copy book, or near the line of the ball or if his bat was a trifle aslant. Kunderan's mercurial and memorable innings that day gave positive proof, that good batsmanship lay not in sheer scientific skill or plodding perfection but in attributes like the spirit of adventure, the suppleness of wrists, sharpness of eyesight, and springiness of reflexes. An English sports scribe who was privileged to witness Kunderan's knock went into rhapsody and compared Kunderan's batting to the art of Kanhai, the West Indian.

If Merchant and Hazare were the products of the Bradman era, more interested in the mathematics of making runs than in the attrative art of making them in a poetic or a pulsating way, Kunderan is the pioneer pace setter for the present Indian bating renaissance-a spirit symbolised by Hanumant Singh, Jaisimha and Durrani.

Truly, the soul of Ranji has its happy reincarnation in Kunderan–that Marvel from Mangalore.

A Rendezvous with...

V. Ranganathan

To persons, particularly of the final year Production Engineering course, an accident is defined in "INDUSTRIAL SAFETY" as an unforseen, unexpected event which may or may not cause injuries. This definition can never be forgotten as it is the *summum bonum* of all that safety has to proclaim.

It was only the other day, on Pongal day, that I ventured to go to C. V. K 'S home, only a few yards away, to wish him a happy Pongal and *enpassant* to show him the new scooter which had been pining for want of a driver. Hitherto I had no practical knowledge "on the seat". Back there at I. I. T, K had taught me, balancing alone, with himself on the pillion, manipulating the controls. Further my age was protesting at the fact that an Electronics Engineer demonstrating the vagaries of an I. C. Engineer was simply too much to stomach. Further more his gear-box had to be replaced, as my dabbling at the controls was enough to relegate the Lewis criterion of gear-teeth design as being too conservative. In addition I was fresh from the I. C. Lab. and the Specific fuel consumption curves were still vivid in my memory.

Coming back to what had occured, I started the scooter, with the gusts of any Senor, and adjusting the throttle, disengaged the clutch, changed over to first gear and after an initial shake up I was off. A cold shiver was running down my spine but I condoned it as being merely an amateurish feeling and certainly not as ominous. Remembering that an engine on first, involves too much strain, I resolved to change to second. Naturally I had to look where the sign of second gear was and my attention was diverted away from the road. The gear had to trespass past central, on to second, and of course K's instruction to reduce the throttle came to my mind.

When I looked towards the road all my knowledge about engines vanished. There was a car hardly a few feet ahead-and I was just my ordinary human being, facing a dynamic problem of avoiding an unpleasant collision. I had blissfully forgotten the existence of the foot-brake, presumably having seen too much of the band brake at the I. C. lab. I inadvertently called out for instructions from K who was not at the pillion this time. Panic, the Samaritan of the nervous, came to my aid and I unconsciously increased the throttle, whizzed past the

car and crashed against the wall opposite. All this happened in a fraction of a second, as all accidents do. The natural concomitant was of course, a minor injury.

The maxim that commonsense is for common people, and that we should as engineers, assimilate more of esotoeric knowledge is worth questioning. I suppose everyone should have commonsense as the base on which any edfice of knowledge should be developed. Physical immaturity, risk taking tendencies, to quote the Safety Engineer, are the few causes of accidents. The truth embodied in the statement that learning from experience, particularly from others, is worthwhile as the cost of such an experience may be too much or even priceless, as a human life is.

"It is costly wisdom that is bought by experience"—*Roger Ascham.*

Indian Summer

Like giant burial stakes mourning a season's death,
Yearning arms pleading heavenwards, starved
Trees stand all around brown and nude.
Dusty blue and breathless, the sky shimmers,
Gasping to carry the giddy heat,
Yawning furnace, kindled to the optimum.
Restless winds dance, whirling witches,
Showering eddies of dust, casting a spell.
Hot air expands as per Physics,
Life hides in silence, dumb with exhaustion
Until a lone bird pierces ihe stillness,
A frenzied cry, a tottering fight, plunk drawn to gravity.
Life wanders in a day dream, a watery dream.
Until distance lends not charm but ambrosis.
Every slope melting into flowing water,
Tongues hanging, man and beast hasten towards Maya.
Mangoes, melons, and cocoanuts abet the dream.
Yellow. red, raw that hit the eye.
Nights hang heavy with sickly groans,
Sensuous Jasmine perfuming the sweat,
Soft echose of dazed love and tossing sighs.
Darkness brings a sense of coolness,
While sizzling stars sparkle like fire-works.
A weeping child, rocking with sobs,
Subsides into sleep, happy oblivion.

(V. S. KUMAR)

Cairo (or Abbas)

R. Shankar

I am not very sure about the title I should give this article. The attempt is to give an account of my stay in Cairo but the joker Abbas pokes his dirty cigar-like nose into it, so many times that he shares the title.

I am darned if Abbas reads this. I write this article for those who may like some dope on Cairo. But as this article also contains the theme of a plan I had to follow to outwit Abbas, I am scared about the consequences of Abbas' reading it. He'll club me the next time I go to Cairo. Let me tell you who this egg Abbas is and all that rot.

Last May I went to Nigeria to join my parents. I stopped over at Cairo for 6 hours (between 2 and 8 A. M.). Though I was confined to the jazzy airport, something told me that a really good city was around and I must see it on my way back.

This I did. With Air India offering to foot my expenses for a day on my return journey, there was nothing to stop me from having a day's fun at Cairo. Honestly, my idea was to see this good city and certainly nothing like meeting this strange mistake of God, Abbas, who was created with a hair style that made crows homesick while the stuff inside drove men crazy.

When the custom guys left me at the Cairo International Airport, it was around elevenish. I came out with my box. A huge Cairo officer informed me that the airport transport bus would leave in about three hours. Didn't sound good. I mean, strolling at the airport for three hours till your shoe breaks down may be a juicy scheme to many, but not to me, and definitely not at eleven in the night.

I reviewed the situation. Bus leaves in three hours. So no sense waiting. I had with me six Egyptian pounds. The Egyptian pound is nearly equivalent to an English Pound. Hundred piastre's (P) make a pound. Finance being quite smooth I decided to take a cab. I knew that the best way to see a city in and out is to ask a cab chap to take you to the Hotel by the shortest route after rubbing it in that you are new around the place. Something told me that this wouldn't click in

Cairo where cabs didn't have meters. The ye ol' bargain process, then.

Two or three cab drivers just ignored my yelling. Then a huge cab stopped before me. An Egyptian driver released a lot of his neck outside the window and asked me where I wanted to go.

"Atlas Hotel", I said.

"One pound, Saar".

I probed into his moustache (90% of the Egyptians have this growth) but failed to find a smile. So the idea that this was a cheap joke, that probably thrilled the sadistic local cab drivers was rejected. I mean £1 isn't a joke. I wanted to tell him, "Look Ayub, or Muhammad or Ali Sabri or Nasser (or whatever his name was), £1 happens to be 1/6 of my wealth and I have better ways of spending it."

But on eying the blighter, who seemed to be about eight feet tall. I gulped my comments and conveyed the idea in more decent words. He vanished.

About ten minutes later he came again, this time with a passenger. He told me that 50 P would be enough as the other gent would pay the rest. I told him it was O. K The cab started. The city was really splendid with broad roads, (right hand drive) huge and well lit buildings.

The driver started talking.

"Saar. You a tourist?"

"Yes" I said, for such was, the case.

"I am Abbas, saar, I can show you round Cairo, saar, I show you the museum saar, £2, and the pyramid saar, £3, and put you back at the airport £4, saar."

I told him I would be going by a tourist bus. He told me how the tourist agencies cheat the tourists. I couldn't see who else they would cheat. Finally I gave up and agreed. This piped him down.

We reached the gents' destination. Now I reviewed the posish. Here I was, alone in a cab, with a driver already 8' 6" and growing

at a rate, visible to the human eye. If he wanted he could be real mean now. He could ask me to eat my head or shell all the dough I had. So the efficient brain started clicking. The peace pipe was lighted. "I say Abbas. Darn good of you to offer to take me around the city. £4 was it? Very good. I'll be expecting you tomorrow morning."

The joker was visibly pleased. Soon we reached Atlas. I alighted. I was darn pleased that Abbas didn't cause any drastic changes in my schedule. The poor blighter told me, "Ill come tomorrow at 9 sharp, saar". I eyed the rogue. "Lets see," I said casually and strolled into the Hotel.

The next morning I agreed with the receptionists' suggestion that I take the tourist bus. Abbas was completely out of the picture. The bus was to leave round ninish. My fellow travellers were four Sindhis. One of them was a chap called Lalwani who looked like a man that had just finished saying Yahoo. We became good pals. Just as the tourist bus came over, I saw Abbas in his cab. Life took a new turn. I mean one can't live in peace if guaranteed a lot of Abbas dodging; that too the Abbas' that pop up like Jack-in-the-box. Being a bit fast on the feet I dashed into the tourist van. After talking to the watchman for sometime he tooled off.

We stopped before the huge museum. To the left was the 400' Cairo tower from which T. V. programmes are broadcast. Papyrus plant is grown before the building. At this stage the tourist man introduced us to a huge character by name of Mohammed. He took us all over the museum and later to the pyramids. The museum was really fantastic. One had to go back in time to appreciate the objects kept before us. These were from the pyramid of King What's-His-Name. We saw the clothes, foot wear, palanquin, throne, crown and ornaments of the Pharoah. The cereals that we saw there were 300 years old, but according to Mohammad, were fresh and good. Then we saw the coffin of the king. This was made of gold and fit his body perfectly. This was later shoved into a room like coffin and left in the pyramids. We didn't see the *mummies* as Lalwani refused to pay up 25 P for the entrance.

We left for the pyramids. We crossed the glorious, dark blue Nile, that had seen the Egyptian civilisation in all its glory, the Nile that once Cleopatra sailed in and all that rot; in short the Nile that had a glorious history. I had no difficulty in imagining the ye ol' days when it was crammed with ancient sailors and traders.

Half an hour later we reached the pyramids. It was a glorious sight. There were four of them. They were as new as ever, but for a

few damages. At a height of ten feet on the biggest was an opening 4'×4' which was the entrance. Mohammad told us that it took a million slaves, thirty years to build this 13 acre 456' high project. (vol. 8 million cut ft. No foundation). I visualised the days when slaves slogged in the very same spot where I stood. Near them were Egyptian officials whipping them to work. Probably once in a while the Pharoah himself would tool over for a glance of the project. Lalwani said that the Pharoah could have built a hotel instead of this. We politely agreed. Lalwani resumed the "Yahoo" position.

We climbed into the 4'x4' hole and crawled through the dark cook cool passage up a slope inside the pyramid. We soon came to the kings' chamber. It was room about 20'x20'. It was empty as all the things inside were taken to the museum. Lalwani told us about ghosts in pyramids. I didn't like the idea of having a pack of ghosts all over the place. I mean, you run like mad from one ghost only to bump into him coming from the other side. We came out, saw the Sphinx, carefully avoiding the camel drivers who asked you to take your snap on the camel and then asked you for a pound. Most tourists fall for this, of course, not ol' Lalwani.

We then went to the other side of Cairo to see a "Citadel". This was a fort the guys built to dodge the crusaders. It didn't interest me much, except for the fact it gave us a bird's eye view of Cairo. The pyramids were at the horizon. A truly magnificent scene.

We were dropped at the hotel. The Sindhis suggested that we go together to the airport. I had £ 1 left now. I would give 70 P to Abbas (who had asked the watchman to tell me that he would be coming around 7·30 to take me to the airport) and keep the rest. So I told them I was going alone in a cab.

At 7½ I was ready outside the gate for Abbas. The blighter never came till 7 :30. Then the four Sindhis came. They had gone for a loaf in the city. They asked me if I would come with them to the airport. As I was thinking, Lalwani asked the others *who* would pay the airport tax of 50 P. I burst out.

"The *what* tax?"

"Air port tax, young man", says Lalwani.

This meant trouble. Giving Abbas his his 70 P and then selling my watch to pay up the airport tax seemed a bad plan to me. The idea of asking the airport officials if they could use a spare watch or a tennis racquet seemed highly foolish. I decided to hook it before Abbas arrived. I am not the "et tu" type of guy, but this was different, dash it. I

asked the form thugs to hurry up. They obliged. I got myself sandwiched between them and the cab startad to the airport. Just then I saw Abbas coming in through the IN gate (may make no sense to I. I. T. chaps).

We reached the airport. The bill came to 15 P per head. After tipping the porter and parting with 50 P for tax I had just 5 p left. As the plane took off, I thought I saw a huge taxi speeding towards the airport. Something told me it was Abbas.

That is why I said Abbas would club me next time I go to Cairo.

On Self Deceit

T. Gopichand

'Man is a born liar', thus blurted out Liam O' Flaharty, summoning all his Irish frankness, as an opening sentence of one of his novels. I never read this novel further than this sentence, but the comment remained in my mind; it comes to the surface whenever I had to analyse human behaviour. During my frequent efforts to synthesise the motives of human behaviour, Liam O' Flaharty's remark always provided me a strength, like a wooden plaque for a man being swept away in a flooded stream. It also taught me to analyse men's actions as such, rather than the individual's and not to confuse between the motives and the personalities of the individuals.

A lie is always told or invented to deceive. A lie can be intentional on the part of the person or he may not be aware of its truth. The lie may be intended to deceive others or to deceive himself. This and finer distinctions are necessary to enable one, to understand the 'phenomena of deceit'. It is the second kind, 'Self Deceit', which is more interesting-personally-to analyse and I put in this article a few random thought and observations. 'Deceiving others' is a twin of 'Self deceit' and both are treated simultaneously. However, I should like to state in the begining itself, that most of the analytical techniques of this sort should not be applied for self-analysis, till one gains a certain amount of confidence so as not to be lead to disastrous conclusions

Like many other instincts, 'Self Deceit' is a gift for human beings; to survive inspite of odd circumastances. But when it ceases to be an instinct and becomes a complex, or when it is used even when the situation is not called for it, then it retards all creative activity. In this aspect 'Deceiving others' is also similar. If it is done as a measure for survival, in the strictest sense, no one has any right to question it In this domain, it is the right of an individual to take care of himself. But when it is used for other means and practiced by a set of individuals life becomes misera ble. On the average, if there is little "trust" among individuals in a community, its life is a jungle, uncivilised, inhuman life.

'Civilisation is a social order which promotes cultural pro-creation' as defined by Will Durant. It is like an organism with its own unpredictable life cycle. Civilised societies during their decadent years promote 'Self Deceit' and 'Deceiving others.' The spark of civilisation becomes

extinct, but the 'Self Deceit' and 'Deceiving others' continue to flourish. Perhaps, individuals can at times reach the pinnacle of civilised behaviour, but societies in general, are slow to attain it and prone to be more difficult to retain it.

'Self Deceit' meant strictly for survival is meaningful. It even gives the necessary 'ego' to create a'level of confidence' and is in general healthy. It might even give rise to a feeling of contentment, and hence happiness. Outside this limit an individual becomes a slave of his own habit and if he does not discipline himself, even his own existence and the happiness he thinks he is deriving, becomes imaginary and if the body or mind falters, becomes a lunatic.

'Deceiving others' ia a short-sighted policy. The limit to it is prescribed by the proverb 'One can be fooled all times; all can be fooled once; but all cannot be fooled all times'. The culprit shall be outcasted by a healthy society or shall be a potential danger leading to the doom of the society which cannot punish him.

A collection of human beings interact in their ideas and behaviour patterns in such an admirable way that the community as a whole, is a real stable system. Parts of it may be knocked off, smashed or annih lated due contingencies of human stupidity, individual or collective but the species continue and a new collection of societies with fresh incumbents persist.

An average healthy mind grasps easily the essential out-lines of an rderly decent human behaviour. Ignorance or a teething poverty, when every act counts for survival, can only devise the ways and means for 'Deceit'! A human mind tries to come back to normalcy, when the latter of the constraint, is removed. But ignorance, some times aided by fanaticism or the static bad qualities of religion, lasts longer, abets and aids 'Deceit'.

An average healthy society weeds out continuously the abnormal aspects of 'Deceit'. Or let it be that a society which can weed out the malcontents from its members shall be healthy. One such society in Persia in the good old days coined a proverb:

He who knows not,
And knows not that he knows not,
Is a fool,
Shun him.

He who knows not,
And knows that he knows not,

Is a child,
Teach him.

He who knows,
And knows not that he knows,
Is asleep,
Awake him.

He who knows
And knows that he knows
Is wise,
Follow him.

No Swimming for Me, Please!

S. Narayan

Whenever I hear the splashing of water accompanied by the babel of voices, and I know there is a swimming pool nearby, I am filled with a keen sense of disappointment mingled with despair. And I have ample cause to do so, for I can swim no better than a new-born babe. No one can ever blame me for not having tried, though by nature I am neither tenacious nor persevering.

It used to be a weekly ritual of mine to get up early every Sunday, pull up my brother from deep slumber and cycle over with him to the swimming pool for further instruction. My brother was supposed to be very good at swimming, though he never came into the water with me.

Muttering a stream of curses under his breath against me, the morning, the pool, the bike and the human race in general, and running over them once more to be sure he had'nt missed anything, he would reluctantly show me the position of the hands while jumping in. His gloomy and sometimes hostile attitude dampened my spirits somewhat, however enthusiastic and willing I tried to be. The tiresome biking would have taken the edge off my surging ambitions to dive and glide and float and eventually win gold medals at swimming, and what with the incessant grumbling of my brother, I used to learn practically nothing. Every time I jumped into the water he pulled me up for wrong action like a cop giving warnings for overspeeding. I could not convince him that staying afloat was more important and necessary than mastering the correct action of jumping in. And every time I moved my limbs, feeling the icy cold of the water biting into me and wishing myself in bed swathed in blankets, my brother, sitting high and dry on the diving board, would holler out instructions, which made every soul in the pool turn round and stare at me as if I were something the cat brought in. This, in turn, would bring me running out of the water, reproaching him for his irritating comments, while he would spew fortha stream of scorching abuse against my obduracy. Then I would purposely jump into the water head first, just to aggravate him, flounce desperately in the water, hearing the derisive chuckles of the brother, and finally end up gasping and sneezing by turns. I can imagine the sorry figure I cut, shivering from head to foot, eyes bloodshot, nose running and cheeks burning with shame and indignation. But my brother had a soft corner for me too, and invariably he used to praise me in glowing terms about the significant improvement I had

made, and we usually ended up in a hotel, pilling our bellies with *Idlis* and swilling steaming coffee. Thus the days wore on, but I still could not keep afloat, let alone swim and dive. Every time I tried to keep myself above water, I over balanced and my feet would come down, groping for the bottom.

Then, one fine morning, I resolved to take a chance. I looked around me. Everything seemed the same as ever, except for my determination to swim this time. I walked up towards the deeper part of the pool. I braced myself, and gave a look full of disdain, dignity and resolve, which would have bowled my brother backwards had he been facing me. Unfortunately, he was gazing wistfully at a girl going through the motions of a perfect dive. My stout heart weakened as I peered at the depths of the pool. My knees buckled, there was a flutter in my stomach. I bent forward, then regretted my folly. But then it was too late. I tumbled unceremoniously into the water with a resounding splash. In thrashing around, I gulped down large quantities of water. I felt myself sinking like a stone. I shouted in terror and my voice sounded strange in my ears. The second time I came up I saw my brother wearing a horrified look. I went down again and drank more water. Then I felt a hand around my waist and guide me to the edge of the pool. "Oh, *Anna*" I cried out in remorse and relief. But it was'nt my brother. It was a cross, beefy bulk of a man. My brother still wore that look of a man whose salmon has flipped out of his dinner plate and has hit him between his eyes. The tough guy led me to him with murder written all over his twisted face. He demanded an explanation as to why my brother had not lifted a finger to save me. My brother found himself in a tight corner. Hesitatingly, and with much hemming and hawing, he blurted out that he himself did not know how to swim.

No more swimming for me, please!

A Shattered Hope

M. Venkateswara Rao

On a mountaineering expedition I started,
Full of anticipated adventure and romance.
Risky though was the journey ahead,
Spirit of undauntedness was my guidance.

Five steep mountain slopes I had to cross,
With my own limbs as my kit and appliances.
Of valour and prowess I took recourse,
As I was a man with no personal alliances.

The glorious golden throne yon
With the promise of suzerainty
I long to reach in my ambition
And all hopeful certainty.

Amidst incidents of gloom and cheer,
Reached I the fifth and final stage
When hardships very severe
Came over to provoke my rage.

A tumultuous river had obstructed my way;
Not a canoe crossed my view.
A firm decision I took to swim away
So to lay my hands on the treasure I value.

Overwhelmed me surprise and delight,
When a damsel beautiful, as in a dream,
Offered a well-equipped boat and her might
To succour me from the clutches of the stream.

The look so weird on the beauty
Upset my plans of futurity.
Closing my eyes like a boy naughty,
Set forth I on my swimming journey.

Amazement and consternation drove me wild,
When, unawares, a vortex great had sucked me in.
A whirl in my head and a swoon mild;
Numb were my limbs with repentance within.

Semi-conscious was I on the shore;
I was near the destination when realisation came.
Lo ! There was not a throne of gold before,
But a thorn-bestrewn chair of iron-frame !

First Impressions

" Fresher "

The first I ever saw of I. I. T. was at the time of the interview. Someone at Central station had the benevolence to put me on No. 19, and ages later when I was certain I must be nearing Cape Comorin, I was rooted out of the bus. Before long I spotted a very imposing gate which could not be mistaken for anything but I. I. T., so I took heart and made so bold a venture as to walk right in.

As I was all dirty and tired from a long train journey, the gate-keeper who looked like a General in uniform gave me the cold once-over and ignored me completely. With undaunted spirit, I walked on a little further till the road from the out-gate joined up. But I began to have grave doubts very soon. I was surrounded by forest and the only sign of civilization was the tarred road on which I walked. Was this then, the famous I. I. T., Madras, the higher Technological Institute of national significance? Was it all one hell of a practical joke?

And when a deer ran across the road in front of me it was too much. I turned around and headed back towards the gate, but a motor car of W. German manufacture passing by, made me change my mind again. This time I walked still further and came to Bonn and Delhi avenues, which got me stuck. Innie-minnie-myna-moe landed me on Bonn. As I was going up to a board which seemed to have some sort of map on it, a kindly person came by on a bike and seeing me puffing along with a large bag, offered to help me. I told him I wanted to go to Tapti Hostel, as stated in the call for the interview. I can't express how overjoyed I was to learn that such a place existed in the midst of this jungle. But it sure took some time to rid myself of all my doubts. My benefactor was good enough to give me a lift; and from the carrier I first saw some buildings under construction, then a few completed ones, then a few people on the road, then a cross road with an artistic structure in the centre, then a very large building on the right and finally, the hostels! It was only after I entered Tapti that I was completely convinced of the reality of I. I. T., Madras. Hence I was well received and provided with a room and other facilities.

About the interview itself, nothing need be said; I was successful, as is quite obvious, and hardly surprising-it was so easy!

During my spare time I tried to see as much of the Institute as possible, and to this end the authorities seemed to have put up some maps by the roadside.

First of all I tried to get my bearings to the library. In the thickly wooded area where I ended up, backed by the assurance of the map, I found not even the slightest trace of printed matter, though I looked under every leaf. What surprised me even more was that I couldn't find an Administrative Block to pay my first instalment of fees, though the 'map' clearly indicated it. This time I was directed to a Building Sciences block, which had no connection with fees as far as I could see.

Later on I decided to go for a swim. The lake, I presumed had dried up, but there was no mistaking the huge swimming pool, all blue and gleaming in the distance. So I set out, armed with towel and trunks and though the terrain was rather rough, I consoled myself with the prospect of lazing around in the pool. But luck wasn't with me that day. The one feature in the Institute about which the map seemed to be correct, was fenced in with barbed wire. There was even a moat around it; a castle and draw bridge would have made the setting classic.

I learnt the truth about the 'swimming pool' only when I joined up in July. If any one had ventured to mention anything about sewage disposal to me at the interview, I swear he would have sufferep a black eye. It was my fault for not studying the map carefully enough, but I finally lost all faith in it when I could not even find the girls hostel.

My ideas about this place were, as you can see, very confused, and they still are to some extent but there isn't anything more I can say without deviating from the subject of first impressions, so I wind up with a very apt quotation from a Bombay guy at the Inter I. I. T. Meet- "This is a very strange place, with static rivers and moving mountains."

Beware of Dog

M. S. Chandramouli

I don't know how they keep up with the Joneses way out in England but here in Madras there are some quaint, methods of doing it, most of which ought to be common knowledge by now. If, for example, Mr. Jones has gone in for a Lambretta (second-hand though it be) all you do is wait until you hear the noise of his exhaust at a distance, then hail a nearly cab and arrive at your house, marvelling aloud to Mr. Jones, as you get down, the odd coincidence by which both of you have reached the place at the same time. If, at the clothiers, Mrs. Jones is heard to proclaim loudly, her preference for a certain type of Conjeevaram *sari;* you nudge your wife and ask her to make enquiries, at a suitable decibel level, why a particular variety of *American* silk is not available; if (you are careful to add) the stock arrives will they kindly send information around to the house at once? If Master Jones is generally known to be the first in his class all you do is to let it be known in the surroundings that *your* offspring is *terribly* playful and never really took to books and that sort of thing but you *do* remember that evening when his aunt asked him to recite 'Baa Baa Black Sheep' and he obliged by quoting the complele works of Shakespeare. Intelligent? *Of course.* Only very, *very* playful.

And so on and so forth *ad infinitum.*

However there is one peculiar method of leting Mr. Jones know where he stands, which seems to be the prerogative of the Madras house-owner. This we may label as the Beware-of-Dog method. The method is simplicity, itself. Once you find that Mr. Jones' activities are getting out of hand, that he has removed all the weeds from his garden and is planning to grow Dahlias; that he has been recently elected President of the local Men's Club, well it is time to act and you do so–promptly– by hanging on your gate, a board, which carries the legend BEWARE OF DOG-indeed, the *coup de grace!*

Of course this will involve a small sacrifice on your part, such as for example buying a dog. But then you need not necessarily play the game (who does anyway?–in this world of deceit and treachery); in which case you go right ahead and hang the board; when later eyebrows are raised at the absence of a dog, you may mention casually, that since it is being bought on a hire-purchase basis it spends part of its time at the dog–shop.

The dog itself is an insignificant quantity in the scheme of things. What matters is the board and the legend it carries. Note the diabolical ingenuity of the words printed therein. It does not say beware of a dog, or beware of *this* dog or *that* dog–just beware of dog. The prospective visitor is thus unable tomake up his mind as to how many dogs he might encounter, before he arrives at safety. In particular, if the house has two gates and if each carries one board asking you to beware of dog, you are left wondering as to whether both gates are being guarded or whether it is better to risk one and hope that the said dog is only manning (or rather dogging) the other gate.

And what of Mr. Jones? Well, his personality has dwindled, his hopes are crushed and he presents the appearance of a man who knows when to accept defeat. The children from the neighbourhood no longer crowd around *his* house. Oh, he doesn't have a dog, you know, not to speak of. The passers-by cast a pitying look on his silhouette, which they see in the window and murmur aloud that Mr. Jones is a lucky man really with a neighbour who is *such* a comfort to the surrounding with that *fiercest* little Alsatian ever, which he owns.

There is, however, one fearful possibility which it is better not to contemplate. It is this. Goaded by the maudlin sympathy of his neighbours and perhaps by the majestic growl of your Alsatian at night, it is quite possible that Mr. Jones might be driven into buying a Borzoi. Observe how at once your stock falls! The children rush around to Mr. Jones; the passers–by turn their pitying eyes away from Mr. Jones' windows on to yours. The chain reaction continues.

All this is a contingency which one has to learn to take into one's stride. And then there is always the board. Assuming that Mr. Jones *does* go in for a Borzoi and *does* become the proud owner of a Beware-of-Dog board, you can always do one better by having the words on *your* board engraved in gold. By the time Mr. Jones catches up on this one, you already start thinking in terms of platinum. You are always thus one jump ahead. The crux of the matter lies in your initial lead.

Now, those of you who are already well versed in the art of dog-bewaring may, at this stage, flip the page and pass on to the next article; however, there must be among you a number of unwary souls who are wont to take Beware-of-Dog boards as nothing more, nothing less than a pleasant joke. Take heed ye all, of your ignorance!

Never in your life, brashly open a Beware-of-Dog gate, in the fond hope that the dog is securely anchored Otherwise, before you can say Alathur Ananthanarayana, a big patch will have appeared on the seat of your trousers. The experienced amongst you, who have not yet

flipped the page and are still reading this article, will know that, by far; the best approach is to creep quietly to the gate and genlty say "woof." The response that this cry evokes will determine the subsequent course of your actions. For example, a long time ago, when I was still a neophyte in these matters, I went and said "woof" a sindicated A dirty mongrel which on its back provided boarding and lodging for hordes of fleas rolled out from under a bush. I laughed contemptuously and pushed past the gate. I will never make the same mistake again; fortunately for me before the big brute, (Heaven knows where it came from) could settle down to business, a sweet, young voice said "Tommy" and I was saved from a messy encounter. The moral: look out for sweet, young voices.

In the eventuality that there is no sweet young voice about and you find yourself in a state wherein the dog is sniffing at your ankles, undecided as to which part of your body it should start on first, the best course of action would be to remain absolutely still and murmur sweet nothings such as: "There, there boy. Me friend. Me not enemy." Now Tommy might decide to celebrate this glad news by biting of your shins; on the other hand, of course. he might not. He will probably tell himself that with a face like yours, you could'nt steal a whistle, if it put in your pocket at a Scout Jamboree.

Once this stage has been reached usually all is well. The dog turns away in disgust, to gnaw at a bone. You advance on tip-toe so that the small vibrations of the earth do not disturb the dog, engaged at its meal. This happy ending is not always reached, however. Cases have been reported, wherein the dog after washing its hand of its loath·ome subject and returning to its bone, has suddenly remembered a sacred promise and turned back on its hapless victim with the religious zeal of the duty-conscious.

Keeping this fact in mind, given a set of circumstances where the dog has turned away from you, it is best not to take any risks. Lift your trouser ends and make a dash for the portico. One does not think about dignity and allied concepts at these times. One just runs.

And having done so, one finally comes to the clasic *tete-a-tete* with the Master. "Oh, I'm really so sorry", he says, "did Tommy give you any troule?"

You cast a passionate look in that direction, screw your face into a hideous smile (its bound to be hideous) and murmur "Oh! no. Tommy and I are pretty good friends, you know-he, he, he!"

If not, you may hurt the Master's feelings.

Avernus Diaboli

V. Anantharaman

Ghosts were created when the first man woke in the night. Through the ages innumerable, ghoststories have been transmitted from generation to generation and a whole legacy of ghastly encounters and misadventures with ghosts and ghouls has been beqeuathed to an unbelieving and unsympathetic student world. Sir C. V. Raman would have every man as a ghost and define these, "poor, weak palsy-stricken churchyard things", precisely as non-existent psychological and spiritual hallucinations, arising in a bewildered and abnormal human mind. But Sir C. V. Raman is a scientist, and he has to reconcile the theory of ghosts with the hard material facts of daily life-in as uncompromising a manner as possible. The existence of ghosts is relegated to the realm of imagination-where fancy and fantasy have been fabricated by excessive and useless meditation. This appeared to be an undisputable fact till recently; but events are alleged to have occured in Godavari Hostel which flatly contradict the existence of a theory relating to the non-existence of ghosts, ghouls and other nuisances.

A hostel is never still in the darkness, to those who listen intently. Unofficial sources claim that a certain fixed number of ghosts have been circulating around the hostel, around midnight, and exciting the young scholars to greater and greater depths of despondency and desperateness. Coupled with the menace of surprise periodicals, the report about ghosts has led to the general increase of insomniacs and insane people. The night-long patient vigil of some of my comrades and myself, has been of no use in either confirming or refuting the possibility of ghosts in the vicinity. An attempt to get to the root of the matter was made and I find that our night-watchman, who with no one to keep watch on him, has been responsible for spinning a whole set of yarns about ghosts in Godavari.

One of the earliest reports of the watchman on ghosts tells us that one stormy night, the sleepy watchman found before him the apparition of an undressed being, so repulsive that he instantaneously threw his old *chappal* at it. This appears to us now, as a naive attempt at guesswork. It is hard to reconcile this theory with the obvious fact that if there are ghosts prevalent around Godavari Hostel, there must be some around the Saraswati Hostel too. The Saraswati watchman assures us that apart from the inmates, he has not seen or come across any species in close resemblance to those supernatural and fictitious entities. (He

is often accused of being found asleep at his post around mid-night and this assumes special significance.)

One of our inmates has been periodically having some trouble with ghosts. Whether this is the effect of an overworked imagination or the result of a perceptibly nervous disposition, I cannot tell. He alleged that he had locked his room one day, with a Master lock and left it temporarily for the purpose of paying a courtesy-call on one of his friends when the catastrophe (as he chose to call it,) occured. He found an upturned bed, disarranged cosmetics and disheveled clothing. His neighbours washed their hands of the affair and some enthusiastic ghost supporters hold the ghosts to be responsible for doing this act.

Although he has been repeatedly besieged by the students to accompany him on a midnight excursion to the Stadium, the Head Quarters of the ghosts, the watchman refuses to budge on the grounds that he is "on duty". He further claims that his presence will bull-doze the ghosts into abject submission or evanescent evaporation.

A friend of mine has enough trouble with ghosts to whole heartedly approve the existence of ghosts, as a growing menace to the peace of the campus. He reports that he has often missed his brief-bag in his room in the bus, in the theatre and yet it has, like a false coin, kept returning to him. Here appearance and disappearance of the object in question is activated by the arrival of the midnight hour. Another lump of living matter in our hostel "tunes" in to the ghost frequency every night after twelve and with his extra sensory perception, distinguishes the ghoulish resonance from owlish dissonance He complains about this unceasingly to us :

"He talked and as he talked
Wallpaper came alive,
Suddenly ghosts walked,
And four doors were five

It is possible with the aid of specious reasoning to conceive of an abstract entity like ghosts but it is very difficult to scientifically prove their existence. Frequently, within the ghostly house of the brains, one hears faint and solemn music and an eerie faint carouse. This is when imagination overrides the intellect, and we enter a fascinating and highly absorbing realm, of the abyss of the supernatural-AVERNUS DIABOLI.

Humour in Fiction

M. Vikram Rao

This view is essentially a biased one – limited on the one side by the extent of my reading and on the other by personal likes. I have heard it said that Wodehouse was an insufferable bore with a penchant for writing, to quote somebody, 'odd' English. This oddity (or rather I consider him as such) is well 'versed' in poetry and the like and one who considers the perusal of Latin literature, the ultimate in enjoyment. Latin being Greek to me, I couldn't possibly stand judgment on that. This beginning is more in the nature of a sort of defence than a statement, for I can almost hear the murmurs already!

Humour in fi tion has always been marked by characters, who soon become bywords, and it is not uncommon to hear 'Have you read that Jeeves book?'. Alternatively (and ignorantly) 'Have you read that Jeeves book by what's-his-name?!'. The postion is however not all that bad, for, very often readers digest (with relish) humour in uniform or any other palatable form! It has been the boast of many (and disputed by few) that the humour of the (self or otherwise) acknowledged masters is characteristic. Henry Cecil dabbles in legal wit, (one title reads: 'No Alibi for the Judge!'). Joan Butler has you in stitches with humour that cannot be categorised and Wodehouse has that characteristic language and plot that could not be attributed to anybody else. It is here that humour differs from say detective fiction. John Creasey writes a series of books under assumed names and nobody finds the difference. Erle Stanley Gardener writes as A.A. Fair and gets a 'fair'ly high acclaim early enough to vindicate holders of the 'Whats-in-a-name' view. But take humour-if Wode house wrote under the name of Springbok or anything equally outlandish, he could not, I am sure, so completely disguise his style so as not to be recognised. Advocates of the slogan mentioned above will also, I am sure, buy (when it comes to borrowing, one of course, has to be less fastidious) a book mainly on the strength of the author's name. The next criterion is the publisher. I, for example, would rely heavily on a book published by say Hodder, having been deceived less by this publisher than by any other!

Humour is ladled out in so many forms, nowadays, by a galaxy of authors, and yet can be divided into two categories–one, books written with the intention of being humorous, and nothing but that. A frank confession is implied that you are to be persuaded to laugh or at any rate smile in a wan fashion if the person who has recommended the

author is watching. This, incidentally, is one of the acute problems of etiquette today. When somebody suggests a book or an author it often becomes necessary to simulate enthusiasm and even pass favourable judgment at a later date though it may have been the drabest trash this side of the Suez. (Especially so if that somebody is not just anybody but Somebody!) Coming back to the categorisation, the other type is when an author affects to have a naturally humourous style (!) interspersed amidst a sea of gravity. So much so that nowdays humour rears it's smiling head in the most unexpected quarters. Agatha Christie's 'Secret at Chimneys' was so wryly humorous that I, for one started looking up the meaning of the word 'hack' in the dictionary.

The use of puns is one of the most successful artifices for producing hilarity; yet it seems out of favour with contemporary humour, at least in the realm of fiction. Lamb has said 'I never knew an enemy to puns who was not an ill-natured man'. Nevertheless, puns do not always serve to raise a laugh, but yet have that arresting quality by which one is forced to pause and savour them. Antipathy for them is not found wanting among the reading public and in this context it may be proper to quote Poe: 'Of puns it has been said that those most dislike who are least able to utter them!'

One of the leading contemporary dealers of mirth-quakes is P. G. Wodehouse. His technique is to make a plot so involved as to be devastatingly funny. The Theme is invariably the same-the eternal triangle modified in to a set of polygons Inter-woren to confuse the issue further. In such a case, you savour the book best if you allow yourself to be tossed from side to side with the story without making any studied efforts to unravel the delightful confusion. In such a fashion, the end, where all the knots untie with remarkable rapidity, gives you the maximum satisfaction.

His dialogues are riotous and practically all the characters created by him have become hits; but where he really surpasses himself is in descriptions-mere commonplaces enlivened by the choice of words. To quote an example (by no means one of the best, yet representative): 'There is something about the manner in which Spring comes to England which reminds one of the overtures of a diffident puppy trying to make friends. It takes a deprecating step forward, scuttles away in a panic, steals timorously back and finally, gaining confidence, makes a tumultuous and joyful rush.'

Henry Cecil, on the other hand specialises in dialogues, court scenes in particular. The repartee between counsel and witness would make the Sphinx smile. To proceed in this strain about other authors, contemporary or otherwise, would be easy, but exacting to say the least. To deride, competence is brought to question; to enthuse over a few

would be pointless because those that have read them, require no introduction, those who have not yet done so and intend to take the plunge may want to form independent opinions (for nowhere is it truer to quote 'One man's meat is another's poison' than in literary tastes); and those who have an antipathy for either humour or fiction or both will not read this!

The Shepherd's Call

P. Sudarsan

You blighters all, all of this flock;
Come near and crowd, the night is dark.
The twinkling stars, those dev'lish lamps—
Like blinkers, show the way of tramps.
Allow them not beloved fools,
Beguile thine eyes. "Tis me that rules"!
Stray not! Stray not! The pack is nigh!
The breeze mayhap betray your lie.
O Ye, that wander in this waste;
Turn back before the wolves make haste!

The twinkling stars, the hustling breeze,
The glowing moon, the rustling leaves,

Are nature's charms, praiseworthy deeds.
But lost is he, the one that heeds

The call of night, and eerie sound—
In darkness shrill: The devil's hound!

Nature's tresses, long and lovely,
Are black and sleek and slippery.

Her Day is dull, and not a maze.
The old ram knows: Green lies the graze.

Adorned with blooms, her night to seek,
As true as hell, is death to keep!

Merry Go Round

K. Narayanan

SELF SURRENDER : Vibhishana, Ravana's only sanguine and pious brother, finding that all his words of counsel were not heeded to, by his elder brother, leaves Lanka and surrenders himself to Sri Rama. There was a lot of hue and cry from Sugriva, Lakshmana and others and everybody suspected Vibhishana's motive behind such a surrender. At that moment, Rama narrates an incident to his younger brother and others as follows: "A couple of birds, male and a female were perched on a branch of a big tree in a forest. A passer-by shivering due to cold and rain, took refuge under the same tree. The male bird takes pity on the shivering passer-by and says to its consort, "You see this old man has taken refuge under the same tree where we are living and we should help him. Try to get some dry leaves, sticks and light some fire so that he can warm himself up." Accordingly a fire was lit and the old man warmed himself up and soon he was hungry. The two birds talked to each other. "The old man probably feels hungry. Let us both fall on the fire so that he can take our roasted bodies and appease his hunger". So saying, both the birds fell into the fire. The old man's hunger was appeased.

Rama said to Lakhmana, "When even birds living in this Bharath Varsha are imbued with this spontaneous *Dharmic Sense* and *sacrifice*, you people object to my giving protection to Vibhishana, who, I know has surrendered his all to me. I stand for the protection of all those who surrender themselves to me without any reservations". Thus Vibhishana joined Rama's camp and attained Moksha at the end.

This episode from our famous epic Sri Ramayana, known as Vibhishana Saranagathi, illustrates the quintessence of Sarangatha Dharma.

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WHITHER EDUCATION? I had occasion to attend a gathering of school-boys and college students at Madurai; a popular social worker was putting some questions to the school-students with a view to find out their knowledge of this country of ours. He came across a student doing his ninth standard in Sowrashtra High School in Madurai. The following conversation took place :

Social-worker : My dear boy! Do you know where Sowrashtra is in our country?

School-boy : No, Sir.

Social-worker : Do you know where the Gir forests are in our country ?

Boy : No, Sir.

Social-worker : Do you know the only place in our country where lions are found ?

School-boy : No, Sir.

Social-worker : Do you know where Gandhiji was born? Where is it situated?

School-boy : Gandhiji was born at Porbandar but I don't know where that place is.

Social-worker : Do you know where the city of Dwaraka is?

School-boy : No, Sir.

Social-worker : Do you know where the Somnath Temple (which was desecrated by Mohamed of Gazni several times) is?

School-boy : No, Sir.

The social worker was very much distressed to find the poor knowledge of the boy with regard to important places and incidents connected with our mother-country. He has so cleverly put questions, all relating to Kathiawar or the modern Gujarat state or Sowrashtra in the hope of making the student realise that the very, school in which he is studying, is named after a state, which is so very well known historically. He exhorted the students to attempt to know all about our country first and then know about the world at large.

* * *

LEADERSHIP EXCELSIOR: A popular leader of a party was travelling far and wide, contacting the common folk and feeling their pulse about men and matters in the country. He made a motor-ride with four of his friends to a near-by village. On the way, a peasant with his dirty loin cloth on, saluted him and requested him to visit his hut and then resume his journey. The leader stopped his ride and went into the hut along with his friends and squatted on the clean mud-floor. The peasant's joy knew no bounds thanks to the Leader's kind visit. Soon he prepared some tea using a mud-pot and his only loin cloth as a strainer. The leader's friends who were witnessing the preparation of the tea, planned to give some excuse or other for not taking the drink.

The peasant, began to offer tea to everybody over there, but all except the leader refused to take the drink. The leader alone drank the tea fully, thanked the peasant and resumed his journey. The peasant and his wife were immensely happy over the leader's visit.

The leader and his party traversed some distance. Soon the leader turned to his friends and asked them, "How was the tea, offered by the peasant?" All his friends joined together and told their leader, "How on earth can anybody take such a drink prepared in such a dirty fashion? How did you manage to gulp down one mudpot full of that tea, Sir?" The leader replied, "I did'nt take the tea. I drank the kindness of the poor people. If I too joined with you all and refused to take that tea so affectionately given, the peasant and his wife would have felt very sorry and been hurt also; and to that extent they will be removed from us ideologically and in the service of our country. Workers like us have to win over the hearts of the masses by merging with them and sharing their joys and sorrows." The friends were abashed by the leader's explanation and they could in a way catch the spirit of leadership by this incident.

ACUPUNCTURE: In the days of witchcraft, people used to stick pins into the images of their enemies, hoping to make them suffer. Today, there are doctors who stick pins into their patients for the opposite reason–to make them well.

The astonishing medical practice known as 'acupuncture',–the word simply means needle puncture–is beginning to be used in England. The acupunture was followed to cure people of diseases like asthma, hay-fever, migraine *i.e.*, hemicrania (headache restricted to one half of the head), headaches, duodenal ulcers, anguina, sciatica and sinusitis. It is said to relieve anxiety, fatigue, depression and other psychological states; a great number of skin diseases, children's diseases and gynaecological diseases. This method of cure achieves spectacular results when the concerned disease is in its infancy.

Acupuncture originated in China about five thousand years ago, but at first it was the closely guarded secret of the Imperial family. If you divulged it, your head would be chopped off. That's one reason why it never reached the out-side world. The other reason is that acupuncture was hard to pass on. To learn it you have to have unusually sensitive fingers and even then you have to practise hard for, years, before you could achieve anything.

For centuries acupuncture was the standard medical practice of China; then it fell into decline. But in the last half-century it has been revived and is more popular in China now than at any time before in

history. About half a million doctors practise it and every Chinese hospital has a department attached to it.

To give a brief idea as to what this acupuncture is:—The diagnosis of an ailment is based on the Chinese idea of twelve "meridian lines" in the human body. Each begins in the trunk and ends in the tip of either a finger or a toe. Each has some mysterious control over a particular organ. By feeling the pulse points where they coincide with the meridians, a doctor can diagonise the condition of all the organs without the patient telling a word about other symptoms. A new electric device in Japan, about the size of a T. V. console, set has several terminals which when placed on various finger tips gives a pathological survey of the body.

After the diagnosis, comes the cure. This simply involves sticking a pin in the meridian in exactly the right place. It is put just below the skin at right angles and left there for a quarter of an hour. The idea is to achieve the necessary stimulus or sedation in the meridian, correcting the imbalance which is affecting the organ. Accuracy is the secret. The doctor with very sensitive fingers still needs years of practice to achieve precision. The meridians are thin and wrong placing of pins can do as much harm as right placing can do good. The future of acupuncture is unpredictable since electronics has come to the aid of their gold and silver pins and the ancient secrets of the Chinese emperors.

CHEMICAL ORNITHORHYNCUS: All of us are familiar with the two types of animals, the viviparous and the oviparous, the former referring to the animals which lay eggs, hatch them and allow their offspring to seek their own food and the latter referring to the animals which give birth to their young ones (which will be their own replicas in miniature) and suckle them. There is a semi-aquatic Australian egg-laying animal (mammal) called Ornithorhyncus, also known as duck-bill or platypus. This mammal is considered a link between mammals and reptiles. This duck-billed platypus is a biological curiosity in that it lays its eggs, hatches them and suckles the young ones too. Thus it partakes of the characteristics of both oviparous and viviparous animals.

Similarly we have an element thallium in the third group of the Periodic Table of elements. If one carefully studies the chemical behaviour of thallium, it will be found that it possesses properties similar to those of several elements belonging to varied groups. Since the element thallium partakes of the characteristics of several varied elements, J. R. D. Partington, the noted Chemist in his book on "Inorganic Chemistry" refers to the popular statement that Thallium is considered by many as the *"Chemical Ornithorhyncus"*.

VITAMIN-B: The discovery of the potency of the Vitamin-B series came about due to the wanton act of a grudging servant. A Dutch magnate was maintaining a rich variety of poultry in his farms and commercial poultry-raising was one of his ardent hobbies. He fed all the poultry with fine polished rice and other grains. In spite of a rich variety of nutritious food-stuff, the poultry showed an overall weakness which was eating into the very vitals of the poultry. The rate at which the general stamina was on the wane, alarmed the master and he was very anxious to tide over the crisis. He wanted to consult poultry-experts and so left his headquarters for the purpose. He left special instructions to his servant to take extra care of the fowls. The servant-boy was for a long time jealous of the fowl since they enjoyed a rich feed in the whole farm everyday. So he took the earliest opportunity of changing the regular diet routine for the poultry. He replaced the polished grains by coarse, coloured grain. Within a week of this type of routine, to the amazement of the servant-boy and the neighbours, the poultry showed a very remarkable change in their health. Soon the general debility of the poultry disappeared and the poultry began to grow chubby and pink in health.

After a month or so, the master returned, vexed for want of a proper solution to his problem. Soon after his arrival, he went straight to his farm but to his pleasant surprise, he saw very healthy fowls, in place of the very emaciated ones he had left a month ago. He enquired the servant-boy as to how the miracle had been brought about. The servant-boy narrated all that happened during his absence. The master ordered several samples of the grains to the nutrition-research laboratories for finding out the secret of such a growth-stimulating cereal. On analysis it was discovered that the outer bran in the case of all grains gets removed while polishing is done and that a very essential vitamin is present in that bran. Thus the unpolished variety of the grains contained a lot of this vitamin which is so very essential for the proper up-keep of the general body of humans and the animals.

Thus Dame Nature's secrets are revealed to the world through such accidents as the above-mentioned ones, which turn out to be discoveries in the hands of a capable scientist. It is always the inquiring, inquisitive scientific worker through whom Nature chooses to reveal her secrets. A chance observation by the servant-boy thus flowed into a very useful discovery.

TURNING POINT: It is of interest to note that after Ahalya Sapavimochana in Ramayana, brought about by the contact of Sri Rama's foot with a big boulder, several monkeys with different size boulders on their backs, lined up in a queue and entreated Lakhmana to request his brother to place his foot on each of the boulder, they had carried on their backs. Lakhmana asked them the reason for such a

request. All the monkeys replied in a chorus, "We heard from you yesternight about the miraculous transformation of a boulder into a beautiful damsel by Rama's placing his foot on it. Each one of us is desirous of having a good-looking damsel for marriage. So please ask your elder brother to condescend to place his foot on each of the boulder we are having with us. Lakshmana laughed heartily on hearing them and told them "It is not as if every boulder can be transformed into a damsel by contact with Rama's foot. If every boulder were to turn into a damsel this way, then many boulders were on Rama's way and all should have turned into damsels. It is due to a Maharshi's curse that a lady was forced to be there as a boulder, waiting for emancipation from the curse, which resulted by Rama's keeping his foot on the stone. Rama's foot alone could do that miracle and that too with a particular boulder."

The significance of this episode is far-reaching. Some of us would have had the opportunity of studying one and the same subject under different people, either at school or in college. We would have observed, that we began to get a proper hang of the subject only when a particular teacher started teaching that subject to us. This provides an important turning point in our lives and from that time onwards we evince a sustained interest in that subject and give our best in that discipline of knowledge. The subject taught and the persons taught were the same; but the teacher only changed. But when there is a fortuitous combination of a good teacher, animated lecture, the opportune time and a masterly presentation of the topics, then this is sure to be a turning point in the life of any student. When once the turning point occurs, no extraneous efforts are necessary to keep the student interested in the subject. Both the teacher and the taught have the sacred duty of working hard to bring about the turning-point.

NONE TO THE RESCUE : The physics lecturer of a city college was teaching the Junior Intermediate students. During the course of the lecture, he was discussing some aspects of isosceles triangles. Instead of writing the full word "isosceles", he was writing the abbreviation "isos", during his lecture. One mediocre student got up in the middle of the class and asked the teacher to expand the word "isos" for his benefit. The lecturer put the same question to several first-rate students but none could give the full spelling of the word "isosceles." The lecturer was surprised to see that nobody could spell that word. The student who put the question first requested the lecturer himself to give the spelling. But out came the following unexpected reply, of course, meant in a lighter vein, "That's precisely the reason why I asked all the intelligent fellows of the class to spell the word and come to my rescue. I myself forgot the correct spelling. I have been using this abbreviation for such a length of time that I now have to look to somebody to enlighten me." There was a hilarous laugher in the class-room.

Such things are of common occurrence.

DEAD AS A DODO: Dodo is the name of a flightless forest dwelling bird, sometimes larger than the size of a turkey. This bird and its species is now extinct due to the unscrupulous hunting of the same for purpose of food. This indiscriminate hunting of the bird was not controlled and the result is that we don't have even one specimen of that species. The Dodo has found a place in English phraseology. We have a phrase in English "Dead as a Dodo", which means to say "dead and gone without leaving behind any trace."

It is a matter of consolation that famous wild life experts have advised Governments to build game sanctuaries for preserving the denizens of the forest and the myriad forms of birds and animals. Prohibition of shooting and licensed gamehunting are fortunately in vogue. Wild life is one of the orders of the bewildering variety in the Lord's creation—Nature in its "cruel beauty."

BALANCE OF NATURE: In Japan, once there was a mania among the people for making money-purses out of serpent's skin. Lots of snakes were hunted, killed and their skins were dressed. This wholesale killings of the snakes resulted in the increase in the number of rats, which formed the main prey for the serpents and which ruined the corn fields and other vegetations. The rat menace was there, when the snakes were not killed. Once we disturb any natural order, it ends in some sort of imbalance in Nature. We fell the giant trees in the forests for a variety of purposes but as a result of this the mosquitoes, which are lodged nicely in the bushy trees have to perforce leave the forests and attack the cities. Thus deforestation has resulted in mosquito menace in urban areas. So we find that every every act of the humans has got its own repercussion in the general set-up of things.

Who Knows It ?

M. Hariharan

The following puzzle, which owes its existence to its precursor, "Who owns the Zebra?" (Reader's Digest, Dec. 1964), promises to prove a veritable headache to even the most logical brain in I.I.T., Madras (Staff members not excluded). It concerns five students, each from one or other of the five different Indian Institutes of Technology, who have taken five different branches of Engineering. They are lodged in different hostels during the Meet. Your problem is to find out which of them speaks Assamese and which of them plays Basketball. The following clues are presented as a medley of apparently unconnected facts, as puzzling as a Cretan labyrinth. Answers are given elsewhere.

CLUES:—

1. The five students are seated in a row with the person speaking Bengali at the extreme left (your left).
2. The Chemical Engineer plays Volley ball.
3. The Civil Engineer is seated in the middle.
4. The foot-baller, who comes from Bombay, sits next to the Delhi representative.
5. The Metallurgist sits next to the person who speaks Punjabi, but not next to the person who stays in Godavari Hostel.
6. The student who speaks Hindi stays in Krishna Hostel.
7. The person who speaks Punjabi does not play Hockey.
8. The Madras I.I.T.ian stays in Yamuna Hostel.
9. The Delhi student sits next to the Mechanical Engineer, who sits next to the Bengali speaking person.
10. The person at the extreme left (your left) is not from Yamuna Hostel.
11. The student from Krishna Hostel sits next to the Civil Engineer.
12. The representative from Kanpur stays in Tapti Hostel.
13. The student staying in Yamuna Hostel is to the left of the student in Krishna Hostel (your left)

14. The Tennis champion speaks Tamil fluently.
15. The student from Kaveri sits next to the Chemical Engineer.
16. The Madras I.I.T.ian does not speak Tamil.
17. The branch of Engineering not mentioned above is Electrical.

(*Answer on page 62*)

Misleading Miscellany

P. S. Srinivasan

That definition of a very popular game by the late G. B. Shaw was chiselled out in rather clear-cut terms. But are you sure you could understand a game, any game, the first time you hear somebody explaining it to you or even when you are actually witnessing it? Said a small boy: "Yes, I know all about *it*. When one team is in, the other is out. Two of the players of the team that is out, come in and begin. When one of them who is now in, is out, another of his team comes in. Like this they come in, one by one, and when all of them are in and out, the team that was first in,goes out and other team comes in. When both teams have been in and out, they find out who has won". The boy was, of course, explaining cricket to his chum.

They, out of the innermost depths of the dark continent for the first time, were on a visit to London. "You do your rituals on a real grand scale here", began one "Around a level patch of luscious green meadow, thousands of worshippers had already gathered and were chanting the holy hymns. In the middle, there were two sets of long yellow candlesticks placed erect. Two high priests in flowing white robes came in, walked solemnly to the candlesticks in the middle, and facing each other prayed for a short time. Then there rushed in eleven angry men and started running about. That they were upto no good, was clear from the beginning. Two of them came to the high priest who was praying near the candlesticks and snatched from the holy man, the small red sphere he was having. They pointed out here and there and their gang took up places, leaving the one with the red sphere. a huge devil of a fellow, near the candlesticks. Having seen the dilemma of the high priest, there came out from a building at the edge of the green, two men in armour and proceeded slowly to the candlesticks and stood near them. One of them, asked the high priest opposite to him if he was put to much trouble. His friend took his place near the holy man. The other high priest, having resigned himself to the inevitable, was standing at a little distance away gazing abstractedly upon the scene. Now the devil with the red sphere, after a quick look around, started running and suddenly hurled the same at the candlesticks! He wanted to knock them out of the ground, we thought. The other fellows of this wicked bunch, in the meanwhile, were performing the ritual dance on silent, stealthy feet, moving towards the guardian, perhaps intending to catch him. But this shining example in armour, with utter nonchalance smote the sphere away with his club and started running towards the devil who hurled the sphere. The worshippers, enchanted by this noble

act, goaded him cn with their rhythmic handclapping..." It was, needless to say, an account of the visitors' visit to Lords.

To the American, cricket is as mysterious as, strangely enough on a reciprocal basis, the American football is to the Englishman, and in fact to any man. Football, it is called no doubt, but few are really the occasions on which the foot has anything to do with the ball. And each bunch on the ground seems to be much more interested in the person of their opposite numbers than anything else. What you would condemn as the most damnable foul in football (as *you* know the game) is termed a *fair* tackle in the American version. When you see a number of players writhing on the ground, engaged in a free-for-all, as it were, you may think they are fighting for the possession of the ball. But sometimes you would prove entirely wrong, for, this tackling is indulged in, even when then the ball is nowhere in sight nearby. The reasons are of course best known to themselves.

Now, suppose the odds were even? Sounds a bit confusing, does it not? What if one thousand betters put on an average of ten rupees on a horse that wins at ten to one-and if the horse had dropped at the last moment from ten to one to five to four? Or if you had ten to one on a beauty that will start at odds on? But then, let the bookie tackle all this. After all, he is the agent who passes on to the winner the money he has taken from the loser. The emerald green of the turf, the prancing thoroughbreds and the colourful jockeys are not all that make up this kingly sport.

So you see, it is not easy even to come out well in comprehension of a game, leave alone playing it!

A Vision of the Future

M. Menon

It is a well known geographical fact that three-fourths of the world is under water. The sky-rocketing increase in population makes it imperative for man to take over the sea also, as his living environment. This could be done in two ways, namely, by building a floating city or by building a city under water. The latter is to be preferred since the former is quite unstable due to the surface movement of water and due to the effect of strong winds. Initially, this building of cities under water could be done quite near the shore line, where the water is not very deep and hence this pressure at the bottom is reasonably low. The buildings of the under-sea city should be enclosed in a canopy to keep out the surrounding water. The canopy could be made of high tensile plastics, capable of withstanding high pressure and which are also corrosion resistant. The ideal shape for the canopy is a hemisphere with a radius of about a kilometer. It could be made in sections and then assembled under water. After the canopy has been made water tight, the water inside could be pumped out. Care should be taken at the foundations to prevent seepage. It is preferable to make the entrance to the canopy with a water-lock system, i. e. by having two water tight doors, at the ends of a cylindrical chamber. A person entering from outside, first of all enters the chamber, closes the outer door and then the water inside is pumped out. The inner door is then opened for entry into the city.

After the water has been pumped out, the ground inside can be dried and levelled and buildings could be constructed of rocks dug up from the sea-bed. All these buildings should have basements in order to get free space. Most of the space in these cities, however, should be reserved for agriculture. As it is very difficult to make very large canopies, it is advisable to have a number of small centres spread over the sea-bed than to have one very large city. Since plants as well as human beings cannot live without sunlight or air, these should be provided. For the farmer, we can install powerful sunlamps suspended from the roof of the canopy. The power supply is obtained from nuclear reactors which are located centrally, to supply a number of cities. These lamps could be put on and off, every twelve hours, to simulate night and day. Air is circulated either by pipes from the atmosphere above the sea surface or by the use of permeable membranes. These have been effectively tested in the U. S. recently. These membranes allow the air in water to seep through but shut out the water itself. If the canopy is made of such a material then air

could be obtained from the surrounding sea-water. The percentage of the various gases in the air could be controlled by suitable filters. Sea water could be converted by any one of the modern methods into fresh water, for drinking and farming.

In order to facilitate easy travel, the cities should be linked with tunnels through which vehicles could pass. Travelling under water could be done in water-tight vehicles with caterpillar tracks, like those on tanks, instead of wheels. They could be run electrically, instead of by an internal combustion engine.

The building of Camp Century under ice at the Arctic, proves that under-sea cities are not impossible to build. Agriculture could be carried out more effectively because pests and the weather could be controlled. Troubles like droughts, cyclones, locusts etc, will be non-existent. Many valuable minerals are found to exist under the sea and these could be exported. People speak of emigrating to other planets to prevent over-crowding on this earth but this is not at all necessary while we have so many square miles under water. If people, living under water, were to feel "homesick" because of the lack of rain, showers could be provided on top of the cities and water could be turned on, now and then!

Nature's Catechism on Life.

G. Sampath.

One summer's evening. The birds of the air had, out of sheer exhaustion, just ceased their day long chirrup. There was a deep silence for a while. Then, all of a sudden, the Sparrow tore the veil of silence, chirping in philosopher-fashion, "What is life?"

The other birds were taken aback by this unexpected question. The curiosity of most of them was piqued and there was a moment of eager suspense when answer, was awaited for the poser. The Cuckoo was the first to respond. She cooed in her most melodious, mellifluous voice, "Life is Music."

Going into raptures over the dark-blue clouds of the sky, the Peacock, spreading his fan-like tail and splendid plumage, strutted a jolly dance, as if to say, "Life is not only music, it is a merry dance as well," Poor thing! It dared not reveal its cracked voice before the sweet-throated Cuckoo.

An Earth Worm that had just laboured its way upto the surface, panted out, "Life is a diligent effort made in the dark."

"Oh! No please, Life is a sweet blooming," so said the blooming Rose Bud opening out its rosy lips. The half tipsy Bee which had just kissed the full-blown rose and drunk deep of its honey, merrily hummed, "Life is an ecstasy."

The Housefly wandering hither and thither moaned, "Why not say life is a short day time and be done with it?"

An Ant paused in the act of lugging along a grain of rice several times its own weight, and cried out in anguish, "I do not see anything but hard labour in life."

The Laughing-Jack Dow, unable to say anything in the matter, but designing to hide its own ignorance, indulged in a mock laugther. This seeming insult might well have entailed the unleashing of a rebellion had it not been for the timely intervension of the rain which had just then started coming down in a heavy drizzle. The rain drops fell like Nature's own tears as if to show, "Life is made up of tears."

When the rain ceased, the white-necked King-Eagle spreading wide his broad wings and gliding in circles over-head, majestically and with ease, issued a kingly proclamation, "All that you say is wrong. Life is but liberty and power."

By this time dusk had set in. The practical Crow which indulged not in fancies, entered its rest, built among the branches, announcing to the rest by its copious crowing, that it was time for bed. The rest followed the Crow's example and retired to their self-made abodes The leaves of the trees rustling in the early night's breeze appeared to say, "Life is a dream."

Midnight had struck. There was a heavy silence all around.

The I.I.Tian, extinguishing the midnight lamp in his study, sighed, "There is nothing else in life for me except books and periodicals."

The profligate, returning home after his midnight revels murmured discontented by himself, "Life is one long insatiable desire."

In the small hours preceding dawn, the gentle cool Zaphyr whistled, "Life is an ancient enigma."

The dawn gave birth to a faint reddish glow in the east which grew moment by moment. Presently the tree-tops glittered with a golden hue. The air was full of the music emanating from Nature's winged minstrelsy, when the world was aroused from its slumber and lethargy by the radiant morn ; it heard the inspiring voice of Nature proclalming to all creation :

"Life is a glorious beginning."

Answer to the Puzzle:—

ANSWER :—

THE FIVE STUDENTS SIT IN THE FOLLOWING ORDER.

DELHI	BOMBAY	MADRAS	KHARAGPUR	KANPUR
Chemical Engineering	Mechanical Engineering	Civil Engineering	Metallurgical Engineering	Electrical Engineering
Bengali	Assamese	Punjabi	Hindi	Tamil
Volleyball	Football	Basketball	Hockey	Tennis
Godavari	Kaveri	Yamuna	Krishna	Tapti.

Destination B. Tech...

Arvind Johari.

Security, good pay and a good future are, as often as not, the essential ingredients one looks for when chasing a career. This is especially, ever so much more the case when your old man does the chasing for you. And sure enough the finger unerringly points towards Engineering. How many other professions can boast of being the very essence of stability and advancement of a country? One can never over-emphasize the importance of Engineering institutions; a degree of Bachelor of Technology in your pocket makes you monarch of all the machinery you survey. And that is something that can really lend your walk a justifiable swagger.

One however, usually sees the mere exterior form of an Engineer; the form that exudes an aroma of cologne and solid prosperity. Even authors and journalists confine themselves to describing an engineer as a successful man, successfully working on his second million or so, little realizing the hard work and the sheer sweat of the brow, that takes one to the destination B. Tech.

Unswerving ambition is a thrilling thing to yodel about, if you are a well paid grand opera tenor, dying nightly for noble principles and rushing out--after the sublime tragedy-to fill your capaceous paunch with spaghetti and chiants (or *idli* and d*osa*, if you happen to be in the kind of place I am in); but it isn't quite so stirring if pursued without orchestral accompaniments.

College life was supposed to be a life of ease and tranquility suffused with gaiety at every step-I'd sure like to get my hands on the sinister mob that's supposed to be behind that elaborate piece of delirium!

On second thoughts, I don't think it makes much of a difference, for as it is, the open innocence of my childhood faith has suffered too many shocks since the day when I believed that problems of over-population could be solved by a scientific extermination of storks. Therefore I am not surprised (or even amused) by what college life has to hand out. I'm not complaining.

Some die-hards, the forever unsatisfied set of wise-guys, indignantly point out the absolutely unpractical point of view involved in having a

rigid workshop programme, devoid of almost all engineering values for the ever suffering first year students. They insist we aren't going to become workmen and vehemently condemn anything that calls for a test of brawns coupled with brains. They would rather specialize in the brains department–of course, whether they *can* or not is quite immaterial. And here's where they make their biggest slip. For after all, a workman knows *how*, a theoretical man knows *why* but a good engineer should know the How *and* the Why.

I am all for workshops and practical training; one can never get enough of that.

And now about "Periodicals". Though most of us revolt at the institution of periodicals, we must remember two things. One is facing facts, and the other the quixotic apparition called the long-run. Periodicals prove of immense help in the terminal and final examination and the examinations, in turn, are of invaluable help in assessing our potentials. Examinations are the magic formulae that help us to get ahead in life; you can't dodge them; you can't side step them. They follow you through life closer than Mary's well-known little lamb. You come across examinations at every step of your life and you just cannot afford to underestimate their value. Periodicals put you in shape for the terminals and finals–I bet you'll agree if it weren't for the periodicals we would really be in a helluva state for the finals. And the finals prepare us for further tests–they give us confidence in ourselves to face all those microscopic little things of life that make all the difference. If you have reached your destination the Bachelor of Technology, if you have passed this test and have been conferred the degree, you can stand up to anything that life can dish out, by way of trials and tribulations.

Awright, you don't have to shout it out! I know that to try and epitomize that phase of a student's life which most disagrees with his digestive system, is rather difficult. But well, there you are! Facts have to be faced and examinations *do* prove pretty helpful in the long run, you know. Personally, I wouldn't care to have it any other way. How about you?

Ah! The life of examinations spiced with periodicals! (Ugh) Lead me to where they are held will you (sigh).

GYMKHANA: Dr. [redacted]
Natarajan, I.A.S
S. Sampath, Sh
Sirpal, Shri Prem
Shri Prem Babu, Sh
Aravindakshan Nair, Sh
Gopalakrishnan (Secretary)

Sports: Shri Y. S. Ramaswamy, R. K
Sankaran, V. Srinivasan; S. Gopa
Paul, S. A. Aleem, M. R. P. Shetty, G
Jacob Dominic (Secretary)

Literary Activities: Sarvashri M. S. Vairana Pillai, S
M. A. A. Khader, C. M. A. Nair R. Venk
R. A. Vaswani (Secretary)

Cultural Activities: Sarvashri N. V. Chandrasekaras
Mazumdar, K. J. Srivastava, Prem Inder Si
Mehrotra, M. Kalappa, Gopal Ram Chan
Rangaswamy (Secretary)

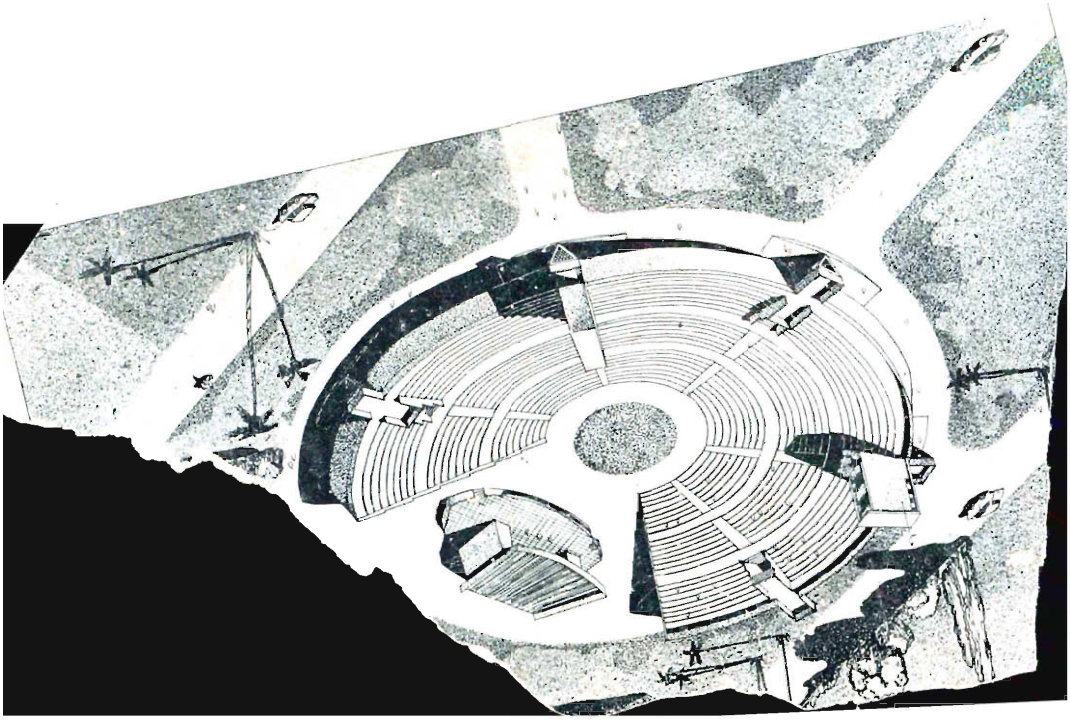
Institute Magazine: Sarvashri G. Viswanathan (Editor)
Kumar (Associate Editor) S. Nageshwar (Asst. E
P. Mohan, V. Koteeswaran, S. Puri, S. Naik

Photogaraphy: Sarvashri M. C. Gupta, D. J. Victor, L. K. Sh
J. M. Anand, P. C. Gupta, Vinay Khanna, Bas
Vetteth, K. Mahesh (Secretary)

Film Club: Sarvashri R. G. Narayanamurthi, H. J.
R. P. Loomba, Gyanendranath, K. Thomas P. L.
(Secretary)

Out-Door-Club: Sarvashri G. Rouve, V. Anataraman, S
krishnan, Rajendra Sirpal, A. Swaminath
Basu John Vetteth (Secretry)

I. I. T. Chronicle: Sarvashri N
Babu, T. S. An
K. M. K



PHOTOGRAPHS

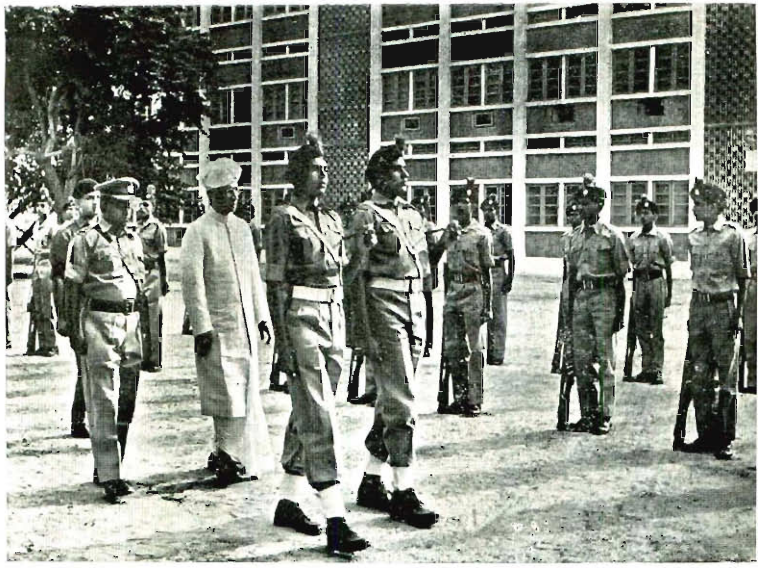
OF THE

FIRST CONVOCATION.

Photos: C. Gourishanker.

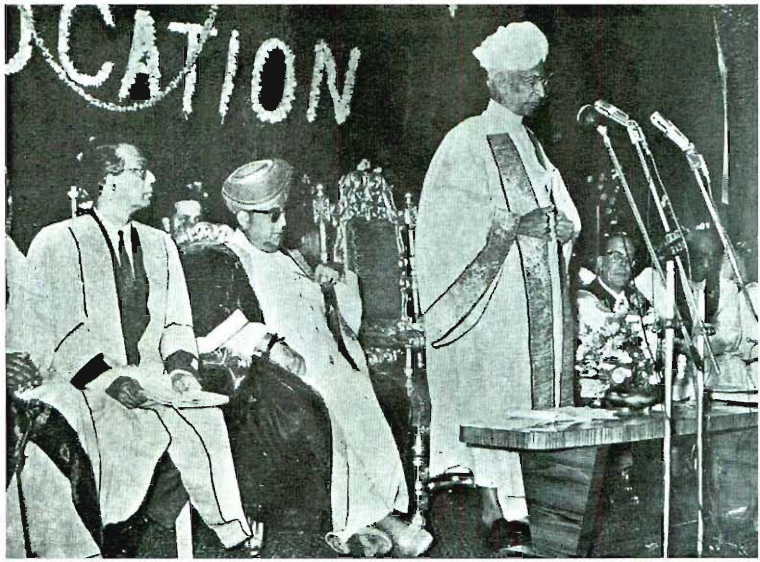
Portrait of the President: C. V. Sahasranamam.

Dr. S. Radhakrishnan, President of India

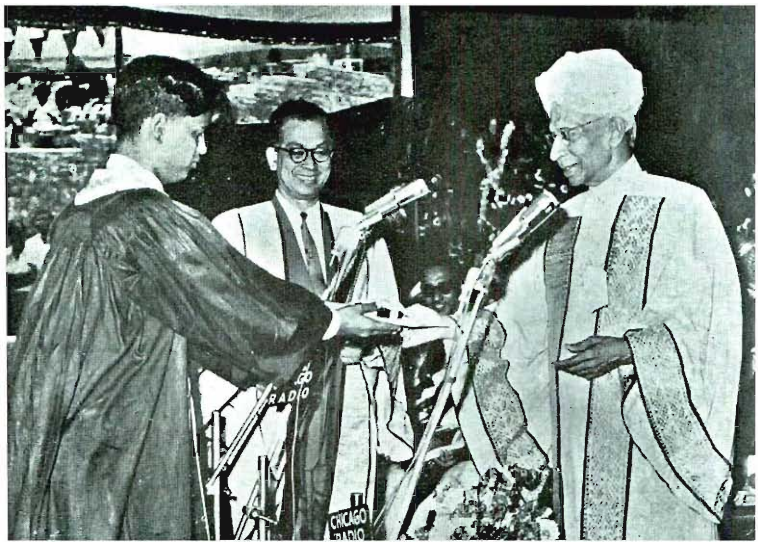


The President, inspecting a guard of honour given by the N. C. C. cadets of the Institute.

Dr. A. L. Mudaliar (Chairman, Board of Governors), the President and H. H. Shri Jayachamaraja Wadiyar Bahadur, Governor of Madras in the academic procession.



The President delivering the Convocation Address.



Shri S. R. Thangavelu receiving the President's Prize for the best performance in B. Tech.

ANNUAL REPORTS

DEPARTMENT OF APPLIED MECHANICS
REPORT FOR THE YEAR 1964–65

Dr. S. R. Valluri joined this Department as Senior Professor and Head of the Department in December 1963. He left for the States again, in connection with presentation of some of his research on theories of metal fatigue. He was awarded the Wright brothers 'medal by the Society of Automotive Engineers for 1963 for meritorius contribution in the field of Aeronautics. He rejoined duty soon after the starting of the present academic year. Since his return, much of his time has been taken up with the planning of the Aeronautics Department which will be started hopefully from July 1965.

Sri N. R. Rajappa proceeded to the Stanford University, U. S. A. for his Ph. D in the field of Astronautics.

We take great pleasure to notify that two of the Staff members, Sri N. V. Chandrasekhara Swamy, Assistant Professor, and Sri R. S. Alwar, Lecturer, have taken their Ph. D degrees from the Indian Institute of Science, Bangalore.

Sri P. S. Srinivasan, Lecturer, who was deputed to West Germany to specialise in Aerodynamics, has since returned and joined this Department.

Prof. Dr. Ing. K. W. Haug, German expert in our Department returned home, in September 1964, after completing his contract period. The Department is appreciative of his contribution.

The following Staff–members joined this Department during the year 1964–65.

1. S. Rajan, M. E. (Indian Institute of Science, Bangalore.)
2. S. Subrahmanyam, M. E. (Indian Institute of Science.)
3. K. S. Ponnuswamy, B. E. (P. S. G., College, Coimbatore.)

A Seminar in the form of a number of regular lectures was started by Dr. S. R. Valluri on the "Inelastic Aspects of Engineering." There has been lot of encouragement from the other Departments by way of regular attendance. A series of seminars on advanced engineering aspects was conducted in our Department. Although the Department does not have any students of its own at present, the project work of a substantial number of the M. Tech students from Mechanical Engineering Department is being handled by this Department. As in the previous years, there has been a considerable amount of research activity going on in the Department, in Fluid Mechanics, Solid Mechanics and Fracture Mechanics.

DEPARTMENT OF CHEMICAL ENGINEERING
REPORT FOR THE YEAR 1964—65

Academic Staff :

The following members joined the Department of Chemical Engineering during the year 1964–65 :

1. Dr. N. M. Raghavendra, B.Sc.,B.Sc.(Tech), Ph.D.
2. Shri V. Muthukrishnan, B.E. (Chem).
3. Shri R. Ramakrishnan, B.E. (Chem), M.Tech.
4. Shri T. K. Ramanujam, M.Sc. (Tech).
5. Shri K. J. Sethuraman, B.E.

Dr. M. Satynarayana, Lecturer, who was on leave at the University of California, U.S.A., as a post Doctoral Fellow, worked on 'Diffusion and Chemical Reaction in Solid-Solid systems.' He returned to India in August 1964, and was promoted as Assistant Professor in November 1964.

Shri A. Baradarajan, Shri K. Jayasimhulu and Shri R. Subramaniam, Senior Technical Assistants, were promoted as Associate Lecturers in November 1964.

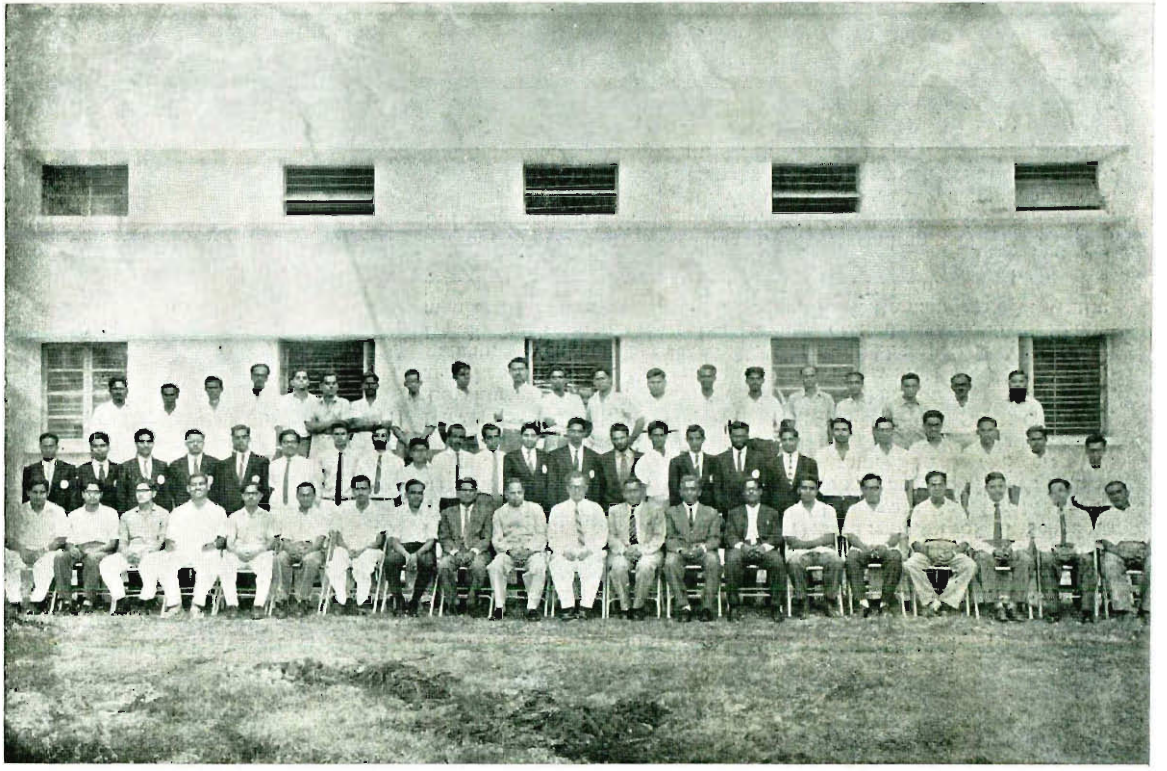
Deputations :

Dr. K. Subbaraju, Lecturer in this Department, has been deputed for a year's training in the Atomic Energy Establishment Training School, Bombay.

Shri R. Subramaniam, Associate Lecturer in the Department, has been deputed for training in 'Synthetic Products Technology' for a period of six months in Bombay.

Shri K. Ramamurthy, Senior Technical Assistant, is being deputed for training for a period of four months in 'Heavy Chemicals and Fertilisers.'

Dr. K. Ramananda Rao, Lecturer in this Department, has been selected to attend the International Seminar sponsored by the UNESCO for Research and Education in Chemical Engineering and Physical Chemistry, at the Technical University, Karlsruhe in the Federal Republic of Germany, from 3-5-65 to 15-7-66.

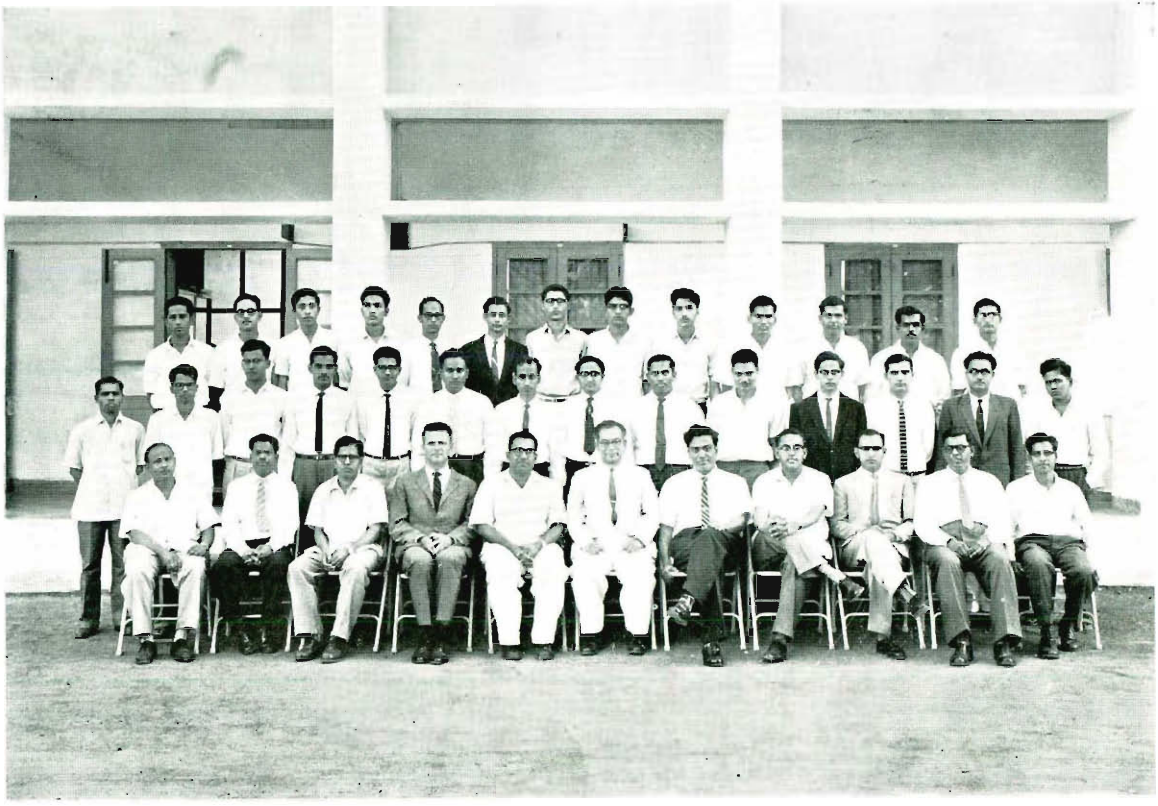


DEPARTMENT OF CHEMICAL ENGINEERING [FINAL YEAR BATCH 1964-65]

Sitting (Left to Right): Shri R. Vedaraman, Shri K. Ramamurthy, Shri R. Subramanian, Shri C. Sivaprasada Rao, Shri A. Baradarajan, Shri R. Nagarajan, Dr. K. Remanandarao, Dr. T. Gopichand, Shri P. Radhakrishna, Prof. D. Venkateswarlu (Head of the Department), Prof B. Sengupto (Director), Prof. G. S. S. Sarma, Dr. P. Bhimeswara Rao, Dr. M. Satyanarayana, Shri Y. B. G. Varma, Shri N. Subramanyam, Shri M. Ramanujam, Dr. M. S. Murthy, Shri T. Venkatram, Shri B. V. Sreeramulu.

Standing 1st Row (Left to Right): Sarvashree T. Srinivasan, G. Krishnamurthy, S. S. Chandak, Lovvkumar Sharma, K. Sadasivam, Subhash Chandra Malhotra, Jagmohan Anand, S. Veeraraghavan, P. Kameswara Rao, K. R. Vijayanathan, Venkata Suryarao, K. Chandrasekharan, R. V. S. Mani, Randir Singh Sehgal, Kuruvilla Thomas, G. Sudarsanan, T. S. Subramaniam, K. Narayanan, K. N. Reddy, T. K. Ramanujam, V. Muthukrishnan, K. Ramamurthy, A. Sebastian, V. Raman.

Standing 2nd Row (Left to Right): Sarvashree Devadoss, Arumugan, C. Rajendran, N. Subbarayan, S. Panchanathan, V. Loganathan, R. S. Sridharan, M. S. Srinivasan, S. Thangiah, S. B. Patil, S. V. Subbarayudu, Y. V. Ramanamurthy, E. V. Prabhakaran, S. A. Kanaka Raj, A. Samuel, K. Subramaniam, B. Srinivasan, K. Vasudevan, G. P. Ramiah Raju, K. Chakrapani.



DEPARTMENT OF CIVIL ENGINEERING [FINAL YEAR BATCH 1964-65]

Standing 1st Row (Left to Right): Sarvashree P. Krishna Iyer, N. R. Dave, S. Kumar, P. K. Krishna Kumar, B. Ramanathan, P. K. Goswani, L. D. Mudolkar, H. V. S. Ganga Rao, S. K. Mukhopadhyay, B. Vasudeva Rao, A. K. Ghosh, S. Balakrishnan, Pandya Jayant Kumar.

Standing 2nd Row (Left to Right): Sarvashree Raman, T. P. Ganesan, H. Rama Ayyar, N. Rajagopalan, S. M. Bhawalkar, P. K. Ninan, C. S. Krishnamoorthy, P Kalyana-Sundaram, M. S. Subramanyam, Chandan Kumar Doss, K. V. Rangaswamy, Inder Raj Bajaj, Amal Krishna Biswas, V. Kannan.

Sitting (Left to Right): V. G. Yadav, V. D. Muthayya, R. Radhakrishnan, Dr. Ing. Gerhard Rouve, Dr. P. C. Verghese (Head of the Dept.) Prof. B. Sengupto (Director), R. Natarajan (Registrar), K. S. Sankaran, M. H. Abdul Khader, Dr. V. Sethuraman. M. V. Panduranga Rao.

Dr. D. Venkateswarlu, Dr. T. Gopichand, Dr. M. S. Murthy and Shri T. Venkatraman of this Department were deputed by the Institute to attend the annual meeting of the Indian Institute of Chemical Engineers, held at Bangalore in December 1964.

Dr. D. Venkateswarlu has been elected as a member of the Council, Admission, Education and Examination Committee, and Publication Committee, Indian Institute of Chemical Engineers.

Part-time Staff:

Classes in the following subjects were taken by experts from outside:

Heavy Chemicals and Fertilisers	Shri R. S. Raman, M/s. E. I. D. Parry & Co., Madras.
Synthetic Products Technology	Dr. R. C. Vasisht, Reichold Chemicals Ltd., Madras.
Control and Automation of Process Industries	Shri G. S. S. Sarma, Assistant Professor, Madras Institute of Technology, Madras.
	Shri P. Radhakrishna, Blue Star Engineering Co., Madras-1.
Production Technology	Shri A. Vaidyanathan, No. 37, Rajendra Prasad Road, Madras-33.

Seminar:

Papers are presented regularly by the Staff members and M. Tech. students, in the weekly Chemical Engineering Seminars. In addition, the following lectures were delivered by distinguished speakers under the auspices of the Chemical Engineering Seminar during the year:

Salt and Marine Chemicals by Dr. R. L. Dutta, Assistant Director, Central Salt Research Institute, Bhavanagar.

Heat Transfer in Gas-Solid Suspensions by Dr. P.S. Murti, Assistant Professor of Chemical Engineering, Indian Indian Institute of Technology, Bombay-76.

Rotating llquids in Conical Vessels by Professor M. N. Rao, Department of Chemical Engineering, Indian Institute of Technology, Kharagpur.

Experiments in Chemical Engineering Thermodynamics by Professor Gopal Tripathi, Principal, College of Technolgy, Banaras Hindu University, Banaras.

Cellulose and Cellulose products by Professor Antavsky, UNESCO Expert, Indian Institute of Technology, Bombay-76

Friction and Theory of Lubrication by Dr. N. R. Kuloor, Indian Institute of Science, Banglore.

Some aspects of Fluidization by Professor M. N. Rao, Professr of Chemical Engineering, Indian Institute of Technology, Kharagpur.

Chemical Engineering in Industry by Dr. P. S. Mene, Director, Lakshminarayan Institute of Technology, Nagpur.

Planning of Inorganic Chemical Industries by Shri P. K. Seshan, Development Officer (AIK), Ministry of Industry & Steel, D. G. T. D. (Alkalis & Allied Chem. Dte), Government of India, New Delhi.

Use and abuse of Computers and *Statistical Methods in Research* by Prof. C. E. Dryden, UNESCO visiting Professor in Chemical Engineering, Indian Institute of Technology, Kanpur.

Theromodynamics of Reacting System by Dr. V. S. Rao, Associate Professor of Chemical Engineering, Indian Institute of Technology, Kanpur.

Desalination of Water by Dr. R. L. Datta, Assistant Director, Central Salt Research Institute, Bhavanagar.

Manufacture and Processing of Styrene-Butadiene Rubber by Dr. N. M. Patel, Synthetics and Chemicals Ltd., Bareilly.

Chemical Plant Design by Mr. N. K. Sen Gupta, Process Plant Engineers Ltd., Calcutta.

Research Work :

The following papers were published :

Compaction of Solid Powders, Chemical and Process Engineering, *45*, No. 1, 406-12 (1964)

Fluid-Particle and Particle-Particle Inference Studies, Indian Journal of Technology, *2*, No. 11, 383-384 (1964)

The following projects are under investigation :

Compaction of Solids.

Fluid Energy Grinding.

Studies in Surface Energy of Solids add Grinding.

Studies in Entrainment.

Momentum Transfer in Non–Newtonian Fluids.

Hydrogenation of Fatty Acids.

Measurement of Mass Transfer Coefficients in Agitated Vessels.

Kinetics of Nitration of Benzene.

Extraction of Chemicals from Tar by Solvent Extraction.

Mass Transfer Studies of Fluidised Bed.

Calcination of Limestone in Fluidised Bed.

Effect of Sound on Premixed Flames.

Diffusion of Solid System.

Separation of Binary Azeotropes by Extractive and Azeotropic Distillation.

Studies in Drying of Silver Nitrate (sponsered by Hindustal Photo Films, Ootacamund)

Classification of Solids.

Studies in Solid Feeding.

Studies in Neyveli Lignite Tar.

Heat Transfer Studies in Fluid Beds.

Fluidized Bed Drying.

Washing of Nitrobodies (sponsered by High Explosives Factory, Poona).

Condensation of Vapours.

Equipment :

Following are some of the major items of equipment received from West Germany, during the year:

Optical Stress Bench.
Tensile Testing Machine.

Electrode Boiler.

Grindability Tester.

Laboratory Air Jet Mill.

Plastic Extruder.

Brine Cooling Unit.

Laboratory Fluid Bed Dryer.

Ionit De-mineraliser.

Vacum two Cylinder Dryer.

Particle Size Analyser.

Centrifugal Mixer.

Bubble Cap Distillation Column.

Disc Pin Mill.

Spiral Separator.

A number of experimental units including the following were fabricated in the Departmental Workshop during the year:

Rotary Drier.

Fluidisation Columns.

Distillation Column.

Tubular Condenser.

Natural circulation Heat Transfer Assembly.

DEPARTMENT OF ELECTRICAL ENGINEERING
REPORT FOR THE YEAR 1964—65

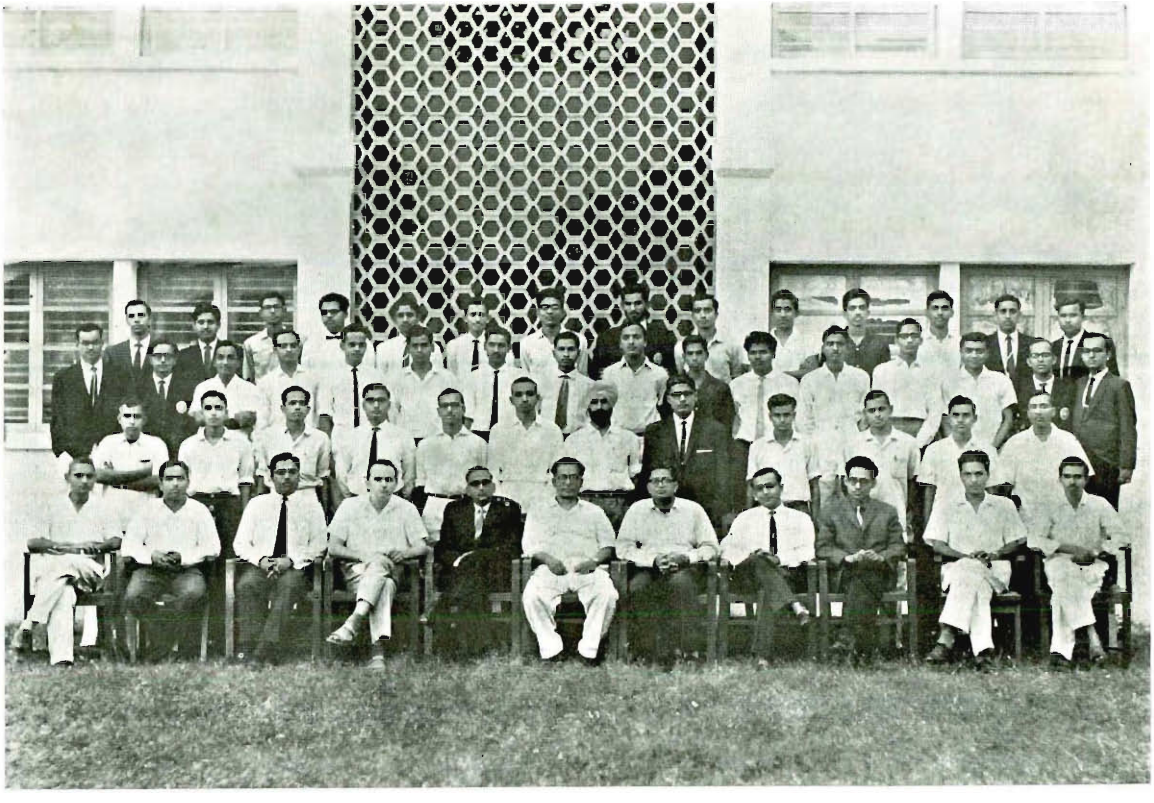
Academic Staff:

The following Staff-members joined the Department during 1964–65:

Sri K. K. Mukhopadyaya, Lecturer.

Sri V. Seshadri, Lecturer.

Sri M. N. Anil Kumar, Associate Lecturer.



DEPARTMENT OF ELECTRICAL ENGINEERING [FINAL YEAR BATCH 1964-65]

Sitting (Left to Right) : Dr. V. G. K. Murti, Dr. M. Venugopal, Dr. K. S. Raman, Dr. S. Seinecke Dr. P. Venkata Rao, (Head of the Department), Prof. B. Sengupto, (Director), Prof. S. Sampath, B. B. Bhattacharyya, K. K. Mukhopadhyaya, K. K. Shrivastava, A. L. Abdus Sattar.

Standing 1st Row (Left to Right) : Sarvashree T. S. Satiamurthy, N. M. Anil Kumar, A. Chandrasekaran, Dr. K. Banerjee, C. S. N. Raju, P. Kotiveeriah, Kulwant Singh Bhatia, Dr. V. C. Kothandaraman, V. Rajopalan, P. Sankaran, P. Sashidhara Rao, S. S. Yegnarayanan.

Standing 2nd Row : Sarvashree C. M. Das, T. S. Ananthu, K. S. Krishnamurthy, P. Suranarayana Murthi, K. Mahadevan, Krishna Kumar, S. K. Saboo, S. Basheer Ahmed, C. S. Mahadevan, L. R. Ramanarayanan, C. M. A. Nayar, K. C. Mallikarjuna Rao, C. R. Muthukrishnan, C. F. Syiemlieh, R. C. Pohouja, P. K. Bhagat.

Standing 3rd Row : Sarvashree P. Mallick, R. C. Madhok, K. M. Chandy, K. N. Nayak; S. B. Lawrence, Naresh Sharma, N. Ramesh, Syed Abdul Aleem, K. Ramanathan, N. Kannan, A. Bhaskara Narayana, M. D. Sridhar, V. K. Batra, J. B. S. Katiyar.

Sri V. Rajagopalan, Associate Lecturer.

Sri P. Sashidhara Rao, Senior Technical Assistant.

Sri S. Dasarathy, Senior Technical Assistant.

Sri K. Venkataramani, Senior Technical Assistant.

The following Staff-members left the Department during 1964–65:

Sri M. Ramamurthi, Lecturer (Left for Canada)

Sri M. S. R. Sarma, Lecturer (Left for the U. S. A.).

Sri P. S. Sarma, Associate Lecturer (Joined I. I. T., Kanpur.)

Sri G. Ramachandra Raju, Associate Lecturer (Joined the Military Engineering Service.)

Sri K. Padmanabha Swamy, Senior Technical Assistant (Joined the Central Engineering Service.)

Sri N. Mukundan, Senior Technical Assistant. (Joined Private Industry).

Sri B. Ramaswami, Lecturer, has been deputed by the Institute, under the USAID programme, for an eighteen-month period of advanced study and research at Purdue University, Indiana, U. S. A.

Dr. K. S. Raman, Assistant Professor, was deputed to I. I. T., Kanpur, for a short period of training on the IBM 1620 Digital Computer. He subsequently attended a Seminar on "Computer Technology" held at I. I. T., Kanpur, in December 1964.

Courses of Introduction

The first batch of the B. Tech. degree students (five-year course) graduated in March 1964. At the Convocation held in July 1964, twenty-four students received their B. Tech. degree in Electrical Engineering. The second batch will graduate in March 1965.

The three-year B. Tech. degree course for Science graduates went into its second year of operation during 1964-65.

The first batch of the M. Tech. degree students are in the second year of the Course and will graduate in May 1965. For these students the Department organized instruction in the following three elective subjects: Power Systems, Control Engineering and Advanced Electronics.

Equipment :

The Electrical Measurements and Electronics Sections of the Department have received the major part of the equipment supply from Germany, and are setting up their various laboratories using these facilities. The bulk of the equipment for the Electrical Machinery and the Power Engineering Sections, is still due.

The planning of an elaborate, integrated power-wiring of all the Laboratories of the Department has been finalized, and installation work in this regard has commenced.

Research work :

Research activies in the Department cover the following areas :

Harmonic analysis and servo-analysis and synthesis, by Transformer Analog Techniques.

Electrical Machinery.

Power System Analysis.

Networks.

Transistor Circuitry.

Communication Systems.

Digital Techniques.

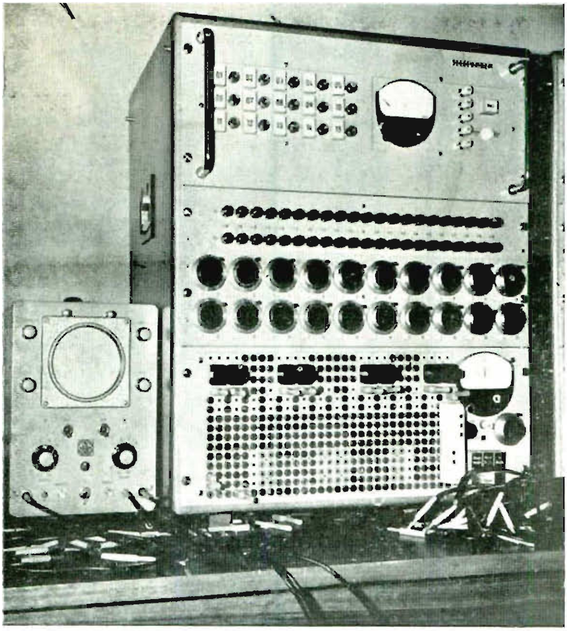
Microwave Electronics.

A paper under the title *The Transformer Analog Servo Analyzer Cum Synthesiser (TASAS)* by Dr. P. Venkata Rao and Sri. B. Ramaswami, was presented at the I. E. E. E. International Convention held in New York, in March 1964.

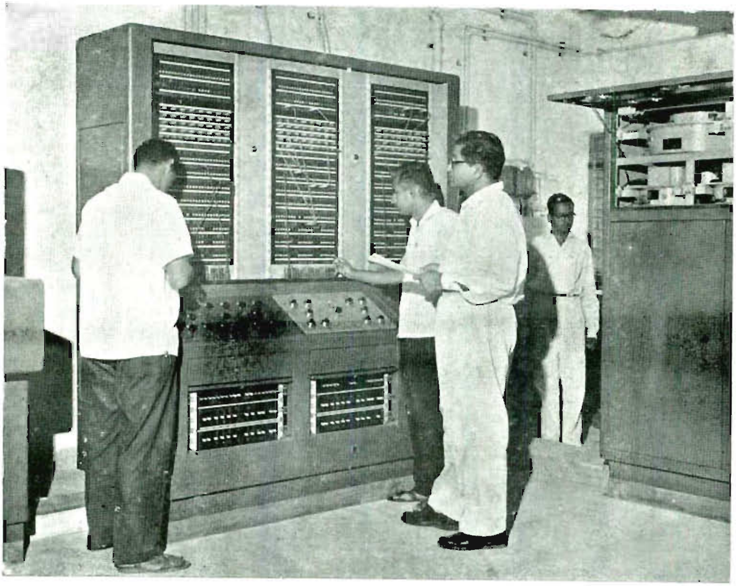
A paper under the title *Analytical Study of Double-Circuit Transmission Lines with Two Ground Wires in the Vertical Plane* by Dr. K. S. Raman was published by the Indian Journal of Technology, New Delhi, in January, 1965.

Seminar :

Weekly Seminars were regulary held in the Department for the benefit of the M. Tech. Degree Students.



SA VS DAVID ......



-- ...... III (iUIIArII

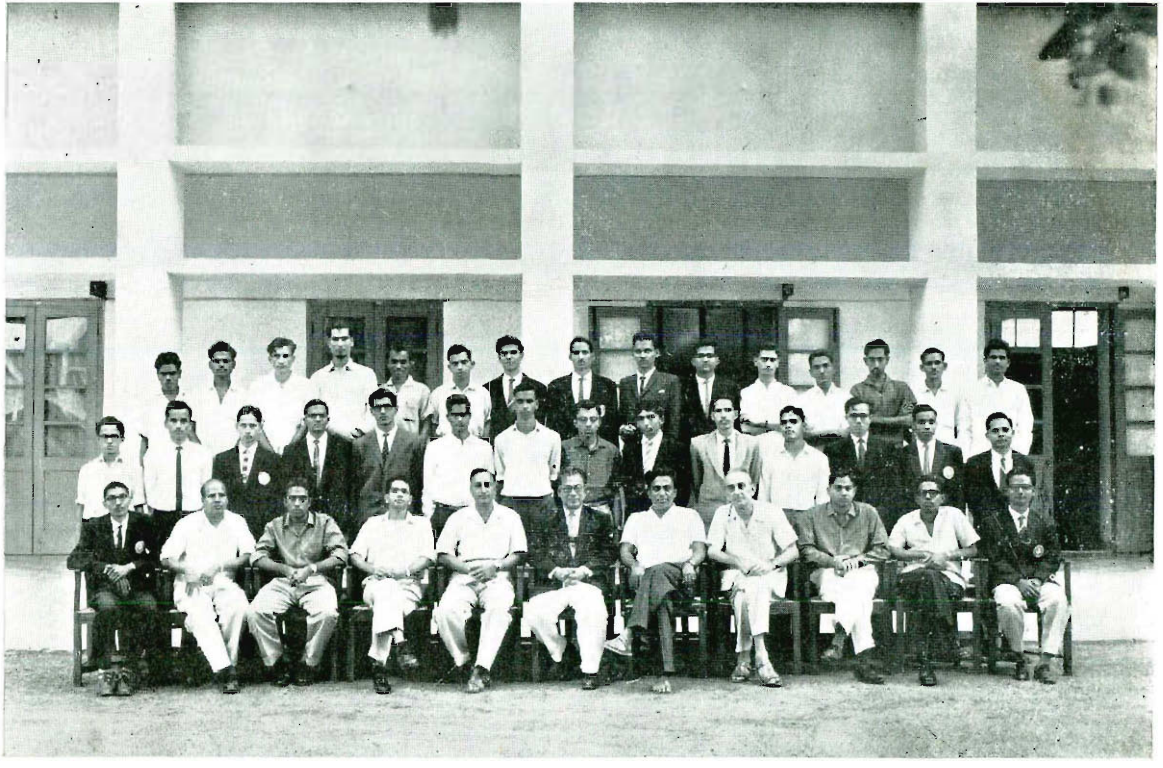
The Small Computer :

Pic shows the Telefunken transistorised Analogue Computer received in the Elec. Engineering Dept. under the German aid. Two units each comprising 15 operational amplifiers and related units can do practically all that the other bigger computer can. Built about a decade after the bigger one, this computer is an example of how modern electronics aids in the miniaturisation of instruments, resulting in products which consume lesser power and which, more often than not, exhibit greater efficiency.

The Big Computer :

Pic shows a large sized, tube-version Electronic Differential Analyser received by the Elec. Engg. Dept. Built in 1952, at the Bell Telephone Lab., New Jersey, U. S. A., the computer has 30 operational amplifiers, 9 servo-units a large assortment of potentiometers and a set of pen-and-ink recorders. It is capable of solving a very wide variety of problems involving linear, non-linear and partial differential equations.

In the Photo, Prof. S. Sampath (Second from Right) *may be seen directing operations.*



DEPARTMENT OF METALLURGY [FINAL YEAR BATCH 1964–65].

Sitting (Left to Right): Sri Pukhraj Jain; Dr. K. I. Vasu; Sri S. Ramakrishna Iyer; Dr.-Ing. T. Ramchandran; Dr. E. G. Ramachandran (Head of the Department); Prof. B. Sengupto (Director), Sri R. Natarajan, I.A.S., (Registrar) Mr. K. Schroeter; Dr.-Ing. R. Vasudevan; Sri S. Sundaresan Sri Amitav Pattnaik.

Standing 1st Row (Left to Right): Sarvashri S. Chandrasekaran; M. Narayana Kutty Menon; S. Shanthakumar; Vinodh Venugopal; K. Mahesh; K. A. Natarajan; K. V. Nagarajan; V. V. Shrikande; M. Vikram Rao; Rajinder Parshad; L. Sethumadhavan; V. Wasudeo Bapat; P. S. Chhaunker; P. Manusmare.

Standing 2nd Row (Left to Right): Sarvashri G. Ranganathan; A. Venkatasubiah; Madhava Pathak; M. M. A. Quraishi; T. S. Krishnamani; S. Ramiah; E. S. Bhagiradha Rao; M. Venkateswara Rao; A. K. Varghese; O. Prabhakar; B. Ragunatha Rao; A. T. Santhanam; S. Rengasamy; M. Durairaj; J. D. Andrew.

The following special lectures were arranged during the year:

Satellite Communication-a series of six lectures, by Dr. V. C. Kothandaraman, C. S. I. R. Pool Officer at I. I. T. Madras.

Evolution of the Semiconductor Amplifier by Dr. M. K. Achuthan (Electrical Engg. Department).

Transistor Equivalent Circuits for Small Signal Linear Operation a series of four lectures, by Dr. G. N. Garud (Electrical Engg. Department).

Colour Television Principles by Dr. S. Seinecke, (Electrical Engg. Department)

Certain Aspects of Lightning Protection of Transmission Lines, by Dr. K. S. Raman, (Electrical Engg. Dept.)

Equalization and Optimization of Third-Order Type-1 System, by Sri V. Seshadri, (Electrical Engg. Dept.)

The Second Method of Lyapunov, by Dr. K. J. Srivastava (I. I. T., Delhi)

Certain aspects of the fatigue of metals, by Dr. S. R. Valluri, (Applied Mechanics Dept.)

On some aspects of Control Systems Engineering, by Dr. K. S. Narendra, (Harvaid University)

Analog Computers by Sri. T. N. Sivasankar, (K. C. P. Ltd., Madras).

Power Development in the U. S. S. R. by Dr. A. Venikov, Head of the Moscow Power Institute.

Prof. S. Sampath delivered two lectures on *Analog Computing Techniques* at the Annamalai University, under the University Extension Lectures Scheme, in November 1964. He also attended and participated in a Seminar on *Recent Advances in Engineering* held in February 1965, at Trivandrum by the College of Engineering, as part of the College's silver Jubilee Celebration.

DEPARTMENT OF MECHANICAL ENGINEERING
REPORT FOR THE YEAR 1964—65

Academic Staff :

Professor	1
German Professors	4
Asst. Professors	2
Lecturers	15
Asso. Lecturers	5

Instructional Facilities :

The Department of Mechanical Engineering offered instructional facilities leading to the Bachelor's Degree in Mechanical Engineering and other branches, for all the years of the five year B.Tech. stream and the first two years of the three year B.Tech. stream. The second batch of the five year B.Tech. Mechanical Engineers completed their prescribed course by the beginning of 1965. Production Engineering and Design Electives were offered in the final year of their curriculum.

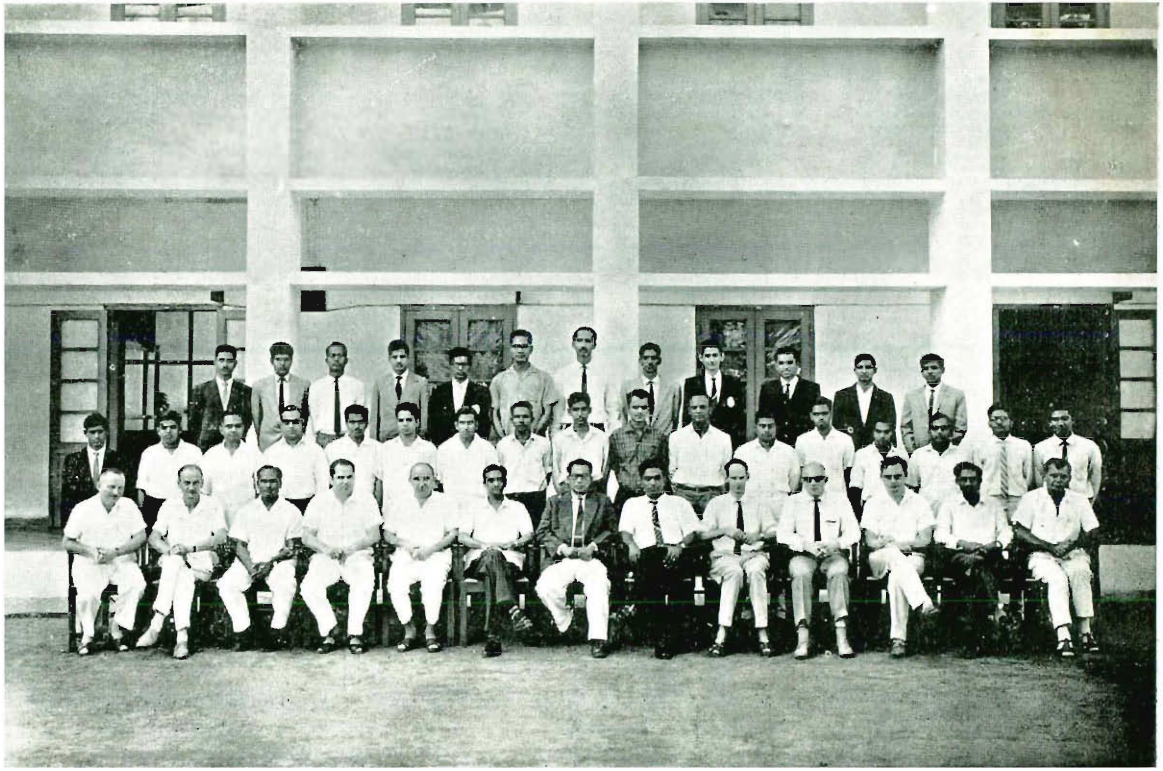
The first batch of the two year Master's Degree course, instituted during July 1963, in Mechanical Engineering majoring in 'Machine Design' will be graduating during the end of the academic year and five departmental members have been enrolled in the first year during July/ August 1964.

One departmental member has been registered for the Ph.D. in Mechanical Engineering.

Laboratory Facilities :

Installation and commissioning of the equipment for the Laboratories—IC Engines, Steam, Thermodynamics and Machine Tool, made further progress during this year. Construction work was in progress for the Laboratories for Turbomachines, Hydraulic Machines, Hot Working, Metrology and Instruments. Instruction in General Machines, Metrology, Materials Handling and Machine Tools and IC Engines laboratories was organised. Construction work of the Thermodynamics and Combustion Laboratories has been commenced.

Items of equiment from Germany have been progressively received for most of the laboratories during this year.



DEPARTMENT OF MECHANICAL ENGINEERING [FINAL YEAR BATCH 1964-65]

Sitting (Left to Right): M/s W. Hasenbein, H. Sohre, Prof. M. C. Gupta, Prof. Dr. Ing. W. Lutz, Prof. Dr. Ing. G. Stahl, Prof. R. G. Narayanamurthi, (Head of the Department), Prof. B. Sengupto, (Director), R. Natarajan, (Registrar) Prof. Dr. Ing. W. Scheer, Prof. Dr. Ing. H. Heitland, H. J. Ebert, Dr. V. C. Venkatesh, W. Goetz.

Standing Ist Row (Left to Right): M/s D. B. V. Sarma, K. R. Govindamallan, C. R. Subramaniam, S. Ramani, K. S. Padiyar, K. V. Thyagarajan, S. Vaidyanathan, V. Radhakrishnan, S. Gopalakrishnan, S. Padmanabhan, D. Prithviraj, G. V. N. Rayudu, S. Krishnamurthy, M. Velayudhan, K. Lakshminarayana, V. Narayana Rao, S. A. Khader.

Standing 2nd Row (Left to Right): M/s J. D. Sarma, P. K. Jain, T. K. Ramakrishnan, S. K. Puri, C. T. Zackariah, Thahnuna, M. R. P. Shetty, Y. N. V. K. Rao, C. V. Sahasranaman, Basu John Vetteth, P. D. Gurnani, E. A. Olia.

Educational Visits:

Visits to major industrial units in Madras were organised, for the the fourth and fifth B. Tech. (Mechanical) students to appreciate production processes in relation to their theoretical back-ground.

The co-operation of major industrial undertakings in Madras, in organising the final year B. Tech. (Mechanical)—Production Engineering, Elective-Project work, was very encouraging and is gratefully acknowledged.

Seminars:

Seminars were organised for the Staff and post-graduate students regularly. The Staff also attended Seminars or special lectures, relating to their fields, organised by the sister departments.

Research Activities:

Research activities covered the following fields:

High temperature phenomenon and its technical application.

Fundamental studies and technical combustion processes under high altitude and high flow velocities.

Direct energy conversion.

Photographing flow propagation by Schlieren technique.

High temperature measurements in gas stream by pneumatic temperature probe.

Ignition characterirtics of fuels, as obtained from adiabatic compression machine and shock tube.

Pulsating combustion studies.

Turbulent mixing in constant pressure combustion chambers.

Scavenging of two-stroke engines.

Fuel injection in SI engines and combustion chambers.

Investigation of multifuel engines.

Damping effect on vibrations during machining.

Diffusion wear of HSS tools.

Spark erosion; Oscillating tools; Tool wear.

Design aspects; Bolted joints in fatigue; Loading of hoisting ropes; Weldments in fatigue.

Investigation of: Frequency and statistical effects in fatigue; Wear in metal to metal contact.

INDIAN INSTITUTE OF TECHNOLOGY
CO-OPERATIVE STORES LIMITED

I. I. T. Cooperative Stores is now running into the 3rd year of its business and it is gratifying to note that it is making a steady progress and slowly expanding its trade. A provision stores, as a branch of the Cooperative stores, was opened at the Shopping Centre in October 1964. It is contemplated to include the sale of the necessary items of provisions in the near future.

The Store has made a profit of Rs. 6018.65 during the year 1963-64 over a turnover of Rs. 71634.00 (these figures are subject to Audit by the Deputy Registrar of Cooperative Stores, Madras.)

The number of members to this date is 1046 with a paid up capital of Rs. 10,460/-

The General Body Meeting of the Stores was held on 3rd Sep. 1964 when the following persons were elected as Directors for the year 1964-65 by Secret Ballot vote for the first time.

President: Prof. M C. Gupta

Vice President: Dr. S. C. Das

Hon. Secretary: Sri C. V. Ramiah

Asst Secretary: Sri P. Poornanjaneya Sastry

Treasurer: Sri K. V. Ragavachari

Directors: Sri E. M. Gopalakrishna
Sri S. Sarathy
Sri M. Krishnamoorthy
Sri R. Ramachandran

The figures given below will appraise the Members regarding the important business transaction carried out during the half year ending December 1964.

From 1-7-1964 to 31-12-64.

Total Share capital collected: Rs. 5400.00

Entrance fees Rs. 270 00

otal purchase made	Rs. 74944.00
Total sale proceeds	Rs. 59256.00

The Board of Directors is highly grateful to Prof. B. Sengupto, Director and Sri R. Natarajan, the Registrar for the keen interest they have shown in the growth of the stores and all the encouragement given by them, from time to time. Our sincere thanks are due to the Superintending Engineer and the Engineering unit for their kind assistance in putting up the new shop at the Shopping Centre.

We thank the members of the staff and students for their kind cooperation and patronage.

C V. RAMAIAH,
Hony. Secretary.

INSTITUTE GYMKHANA

Activities Of The Institute Gymkhana 1964-65

Aug. 64	Gymkhana Committee election
	Participation in League Matches conducted by the Madras State Athletic Assn., Madras.
	Participation in the Bertram Tournaments conducted by Loyola College.
	Participation in the Aboobacker Memorial tournament for Badminton.
	Participation in Jain College Tournaments.
	Participation in the Quiz competition conducted by the P. S. G. College, Coimbatore on the occasion of their Silver Jubilee Celebration.
	Annual Inter Hostel Group Discussion.
Sept. 64	Intramural competitions.
Oct 64	Annual Debate.
	Participation in the Inter Collegiate Hindi Music competition organised by Agarwal Yuvak Sangh.
Nov. 64	Participation in the 9th Inter University Youth Festival.
	Participation in the Quiz Programme conducted by the Saturday Evening Club.
	General Knowledge Test.
	Essay Writing Competition.
Dec. 64	3rd Inter I. I. T. Meet at Madras
Jan. 65	Participation in the Debate programme at Jain College.
	Inter Collegiate Annual Debate.

" Group Discussion

" German Recitation,

" Quiz

" Entertainment competition.

Sixth Annual Sports Day.

April 65 Institute Day.

Trophies From Outside Won By Our Students

1. Aboobacker Memorial Shield for Badminton—fives.
2. Loyola College Cup—Tennis (Singles) in the Bertram Tournament.
3. Sundharavadhanam Cup for Tennis (Singles) at Jain College.
4. Runners permanent Cup for Ball Badminton Fives in the Bertram tournament.
5. Won the Rolling Trophy in the 3rd Inter I. I. T. Meet in Foot ball.
6. Won the Rolling Shield in the 3rd Inter I. I. T. Meet in Volley Ball.
7. Permanent Silver Lamp won by our students at the Quiz competition at the P. S. G. College, Coimbatore during their Silver Jubilee Celebration.
8. Saturday Evening Club shield for Quiz.
9. Shri Mohanmullji Chordia Rolling Cup for Debate at Jain College
10. Shri N. Raghavendra Rao and Shri K. M. Kripanaryanan were awarded the first and second prizes respectively at an Inter Collegiate Hindi Music competition organised by the Agarwal Yuvak Sangh.

WINNERS OF INTER COLLEGIATE TROPHIES

1. Institute Trophy for All India Debate —Medical College, Bengal.
2. Dr. Klein's Trophy for German Recitation—Max Muller Bhavan. Madras.
3. Rao Bhadur Ramachandra Iyer Trophy for Quiz —I. I. T. Madras.
4. Prof. M. V. C. Sastry's Trophy for Group Discussion —A. C. College of Tech., Madras.
5. Prof. Narayanamurthy's Trophy for Entertainment Competition. —I. I. T., Ma as

INTRAMURAL COMPETITIONS

1964-65

Sharman & Co., Trophy for Cricket - Jhansi Rani House.

Surana & Co., Trophy for Foot Ball - Ashoka House.

Pioneer Sports Co., Trophy for Hockey - Jhansi Rani House.

Meenakshi Memorial Trophy for Volley Ball - Shivaji House.

Mehendru Sports Co., Trophy for Basket Ball - Asoka House.

Schroeter's Trophy for General Championship. - Jhansi Rani House.

Individual Championship - Mr. Joshi Paul.

Best house in March Past - Ranjit House.

1963-64

The Engineering Unit Trophy for Intramural Entertainment programme held at the last Institute Day on 1-4-1964-won by the Tamil Drama Group.

GAMES REPORT FOR THE ACADEMIC YEAR 1964—65

The year opened with the realization that the 3rd Inter I.I.T. Meet was to be held at Madras in December. All our efforts were geared towards making the most of playing the host and to put in a much better performance than in the previous years.

In the Inter Collegiate Tournaments, we again started on a promising note but suffered quite a few set backs later on, indicating a need for more practice and experience.

Now for a record of our achievements :—In the Loyola Tennis Tournaments, our champ Lionel Paul breezed through to a straight set victory to win the coveted Bertram Trophy, in the singles. Partnering R. P. Shetty he was runners-up in the doubles. In the Jain College Tournament he again gave a good account of himself, convincingly winning the singles. The performance of the Ball Badminton team was also very creditable. Captained by R. Prabhakaran we were runners up in the Bertram Tournament and easily won in the Stanley Medical College Tournament.

Although our other teams did not win any trophies, special mention should be made of our hockey, football and cricket teams as they defeated and drew with many strong teams. In hockey we were placed runners up in the Jain College Tourney.

A scratch athletics team was entered in the Buck Memorial Meet in which A. Swaminathan raced through to victory in the 110 metres hurdles and M. Kalappa came first in the hop, step and jump.

The 3rd Inter I. I. T. Meet at Madras was opened by the Nawab of Pataudi on 28th December. This year, unlike in the previous years, there was a sense of keen competition which enlivened the interest in the meet.

Our performance this year completely eclipsed the tame efforts of the previous year. On the first day our Foot ball team sprang the biggest surprise of all when they trounced the seemingly invincible holders—Kharagpur with a 2–1 victory. They then went on to win the Football Trophy with a convincing victory over Bombay. Outstanding performances in our team were those of Ray, C. M. Das, L. Tewari and custodian M. H. I. Khan. Our tennis team, inspite of Paul's decisive victory in the two singles, went down to Kharagpur. In Volleyball, Madras was to the fore again with a thumping five game victory over Kharagpur in the finals. Janardhanan and Goswami proved to be invaluable assets to the team. In Hockey we were unfortunate to lose to Kharagpur in a replay of the finals, in spite of a spirited performance by our boys. In Basketball, the superb

coordination of the Bombay team, enabled them to coast through to a easy win in the finals against Kharagpur after a tough encounter with Madras. The Bombay Shuttle team had no difficulty in beating Kharagpur in the finals. Kharagpur, however, had their revenge when they beat the Table Tennis Holders—Bombay, to win the Tournament. In Athletics many of the old records fell by the wayside. Our performance, however, far surpassed our expectations. Joshi Paul proved to be peerless in the 5000, 1500 and 800 metres races, and that too, the latter two in record times. Not only that he also helped our 4 x 400 metres relay team to victory. M. Kalappa came first in Long Jump and Hop, step and Jump, and broke the record in the latter. A. Swaminathan, G. Srikanth, Dandapani, R. Puri and S. A. Aleem, gave a good account of themselves and were placed in their events. Swarup of Bombay wound up with the Individual championship. In Gymnastics, E. K. Olia came first in the Horizontal Bar and was placed in the other two events. Anantha Rama Iyer was placed in the Weight Lifting Competition.

The Meet concluded with Kharagpur winning the overall championship for the third time in succession, Bombay coming second and Madras third. Dr. A. L. Mudaliar presided over the prize distribution and gave away the prizes.

At the conclusion of the Meet, it was found that the efforts of the organisers was not in vain. In this connection I would like to thank the Sports Committee and all those who helped to make the Meet a grand success.

Our College Sports Meet was held on 30th January. It was quite an anticlimax after the Inter I. I. T. Meet with a disappointing student attendance. Many old records were broken and Joshi Paul walked away with the Individual championship. Jhansi ki Rani House, (Kaveri Hostel) won the Schroeter Cup for the overall championship. In the Staff vs. Students tug-of-war inspite of the Registrar's heroic efforts, the Students once again pulled up the Staff. Dr. Gerhard Reichel was the chief guest of the meet and Mrs. Reichel gave away the prizes.

In conclusion, I would like to thank our Director, Registrar, 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 to greater efforts.

M. KALAPPA

PHOTOGRAPHS

OF THE

THIRD INTER I. I. T. MEET

Photos: R. K. Nayar, C. Gourishanker and V. Srinivasan

The Chief Guest on the opening day, the Nawab of Pataudi, watching an event in progress.

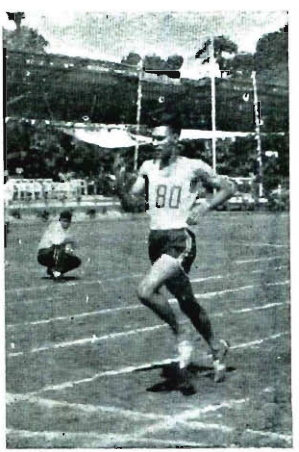
M. Kalappa (Madras) setting a new record in Hop, Step and Jump.

.....Easy as eating a cake

Joshi Paul of Madras.

One, two, three ..... away!

A. S. Oberoi of Delhi.



..... here I come

G. Srikant of Madras.

.....Well..... er.....

Eyes right

Upsy.....

Got set ?

..... Daisy

The English Play

The 'Undergrads' from Kgp. in action

The Hindi Play

The Tamil Play

Entertainment during the Meet.

The prize winners of the Debating Competition.

LITERARY & CULTURAL WEEK

Dr. C. P. Ramaswamy Iyer delivering an address on the final day of the Literary Week.

FINE ARTS 1964—65

The committee for Fine Arts was formed soon after the commencement of the academic year '64—'65 with Basu-John Vetteht as the Secretary.

A Science Fair was conducted in the Institute for the first time. It was held along with the inter-I.I.T. Meet from the 28th to the 31st of December. The students who made the various projects, were an enthusiastic lot and it was perseverence that got the projects working.

Most of the projects were working models. Ravi Kumar's automatic clock was highly impressive. Almost every visitor tried to beat the *Battle of Numbers* made by Belani and Jain. Another machine on similar lines was made by Achia and Karve. The *Tesla Coil* by Datta and Batra always drew large crowds. Naga's *Capacitance Relay* was absolutely fool-proof! If only Sundaresan's electronic counter hadn't stopped working, it would have been possible to report the total number of visitors.

Our thanks are due to the various members of the staff who helped us out so often; and to the workshop authorities for placing all the facilities at our disposal.

Photographs and paintings were exhibited along with the Science Fair. The main contributors were K. R. Mahesh, Olia, and Purkayastha.

Saha's sketches 'The Eternal Rose' (Nehru) and 'The Eternal Flame' (Kennedy) were greatly admired. Shettigar's 'Kamala Laxman' and Santhanaraj's were appreciated.

I.I.T. Delhi also exhibited their photographs. Some of them were of a high standard. Let us hope that in the coming year, ours will be as good if not better!

I.I.T. Kharagpur is holding an exhibition in fine arts. We are sending a few photographs and paintings with the hope that they will secure prizes.

I regret to report that we have not yet been able to set up our own "dark room." The rooms are nearly ready and it is our earnest hope that we shall be able to move in soon.

We committee members are thankful to Basu John who with his inexhaustible energy and quick thinking has helped us out of many a tight spot.

I am indeed grateful to the President of our Gymkhana, Professor Verghese for taking so much interest in our activities all along and for all the assistance he has given us.

RAM KUMAR NAYAR.

THE PUBLICATION COMMITTEE REPORT '64—'65

This Committee was mainly in charge of bringing out *Campastimes*, the Institute Monthly. At the beginning of the year, even before the Committee had been formed, the ball had been set rolling; the Committee then moved in to agument the human resources at the disposal of *Campastimes*.

With Prof. S. Sampath as the Staff Member in Charge of Publications and Sri C. Krishna as Editor of *Campastimes*, the Committee met frequently to deliberate on matter pertaining to the above Magazine. Due to the concerted action of the Committee and to the drive and energy of the Editor in particular, it was possible to bring out a succession of 'ssues.

Other publications with which the Committee was allied were: The 3rd Inter III Meet Brochure, the *Campastimes* Special Supplement and the Institute Annual Magazine.

LITERARY ACTIVITIES REPORT (1964–65)

This year saw the passing out of our stalwarts in debating and other literary activities—Ramesh Vaswani, T. S. Ananthu and V. Siddhartha. From the beginning of the academic year people had been wondering: "After Vaswani, who?" and "After Ananthu, who?". I am glad to report that though these 'masters' were conspicuous by their absence, we were able to hold our own in the sphere of literary activities, at home and 'abroad'.

The year started off with a bang when the first Gymkhana programme-a Staff and Students debate-was arranged. The topic for discussion was: "The responsibility for the low standard of education in India lies with the students and not with the teachers." This was followed by the regular cycle of our Annual competitions-debate, group discussion, quiz, etc. etc., at all of which our "champs" (mentioned before) emerged victors. We also managed to arrange some talks-when we had Shri Kothamangalam Subbu to give us a talk in connection with Bharathi Day Celebrations and also we had Mr. J. D. Smith of the British Council for a talk-"Mods and Rockers." In this context, it may be mentioned that attendance by students was hardly as it should have been. It is requested that at least in the future our friends and colleagues co-operate with us and take more interest in our activities.

In Inter-collegiate competitions we were (as usual) very successful. The first feather in our cap was the winning of the Inter-Collegiate Quiz Trophy for the quiz conducted by the P. S. G. College of Technology, Coimbatore. I. I. T. was represented by M. Vikram Rao and R. Neelamegam. Soon after, we added another feather to our cap when we retained the 'Saturday Evening Club' Trophy for Inter-Collegiate quiz. This time V. Venkatesan represented I. I. T. But perhaps, the major test came when we had to send in our team for the Inter-Collegiate Debate at A. M. Jain College, at a time when our stalwarts had left. This was for the "Shri Mohanmullji Chordia Rolling Cup". S. P. Shukla and A. Kacker represented the Institute and it gives me immense pleasure to record that the trophy is now with us. This achievement was made the more significant from the fact that last year our 'master-debaters' had been unable to get the rolling cup.

Soon after this we had our Annual Literary week. Dr. N. Klein's Trophy for Inter-Collegiate German Recitation was 'bagged' by the Max Mueller Bhavan when V. Dilipkumar stood first. Unfortunately this year, we could not retain Dr. M. V. C. Sastry's rolling trophy for the Inter-Collegiate Group Discussion—the A.C. College of Technology took it away from us. Our Institute was represented by A. Kacker, G. Mahajan, G. Ramchandran, V. Khanna and S. P. Shukla. The Institute Trophy for the All-India Debate was 'whacked' away by the Medical College, Bengal. This was the first time our rolling trophy had gone out of Madras. The speakers from Calcutta were Mahabir Singh and M. G. Mukerjee. The first prize went to P. Chidambaram and the best Lady-speaker's prize to Sujaya Viswanathan both of Law College. The second prize went to M. G. Mukerjee of Medical College, Bengal. Mahabir Singh was placed third. I. I. T. was represented by A. Kacker and C. Camillus. We also had participants from A. V. U. College of Engg., Tirupati. None of us, who attended the Inter-Collegiate Quiz for Rao Bahadur Ramachandra Iyer trophy presented by Shri R. Natarajan, can, I am sure, even with an effort, forget the performance of Venkatesan, who seemed to know everything there is to know. M. C. Murthy was the second member of our team. Our team won the trophy with ease, but it must be remembered that we won it for the first time, previous winners being Engg. College, Guindy. The highlight of the Literary week was the Inter-collegiate Entertainment Competition for the trophy presented by Prof. R. G. Narayanamurthy. As many as seven Colleges participated and I. I. T. emerged victorious—again for the first time we had won this trophy. Dr. C. P. Ramaswamy Aiyar presided and gave away the prizes.

Counting the number of feather in our cap (almost a full-scale 'injun' chief's headgear) we have the satisfaction of knowing that we have done well once more and maintaincd the high position of I. I. T. in the sphere of Literary Activities in the city Colleges. But there is always scope for improvement–on the part of our teams, of course, but, also on the part of our other friends and colleges. Their co-operation

and their enthusiasm to make Literary activities within the campus a success, leaves much to be desired. Are we not justified in expecting you all to turn up in large numbers and act as morale-boosters to your own teams, just by your presence? Is it unfair, to ask you to provide, at least, an audience for the speakers who come from outside? It is our hope that in the future we will receive greater support and thus be able make our programmes more successful.

All that we have accomplished this year has been due to the tireless efforts of so many behind-the-scenes people who are hardly ever mentioned. I should like, therefore, to offer my grateful thanks to all who have done much to make our efforts bear fruit. In particular my grateful thanks are due to the Institute Gymkhana, and to Dr. Klein without whose efforts and 'go' I wonder if we could have accomplished half as much as we actually did. On behalf of the Literary Committee I would also like to thank Shri R. Natarajan, Prof. R. Krishnamurti and Prof. S. Sampath and the Electrical Engineering Department for all the help we have received from them.

Here's wishing to a bright future for our Institute in the field of Literary Activities in the post-Vaswani-Ananthu, Sid-era.

S. P. SHUKLA,

Secretary, Literary Committee.

The prize winners of the Debating Competition.

LITERARY & CULTURAL WEEK

Dr. C. P. Ramaswamy Iyer delivering an address on the final day of the Literary Week

Photo taken on the occasion of the visit to I. I. T. of Shri S. K. Bannerjee, Indian Ambassador to the Federal Republic of Germany.

Photo taken on the occasion of the opening of the new building, Central School.

CENTRAL SCHOOL, I. I. T., MADRAS-36.

The Central School, Madras-36, is one of the 52 Higher Secondary Schools established by the Government of India. The School started functioning from the 20 th July 1964 with standards VI to IX. Standards X and XI will be added on in 1965 and 1966 respectively.

2. The new School building has been designed for 720 pupils spread over 24 sections, there being 4 sections in each of the 6 standard from Standard VI to Standard XI. Normally two of the four sections in each standard will be for boys, while the other two will be for girls.

3. The order of priority for admission will be as follows:

(i) the employees of the Indian Institute of Technology

(ii) Central Government servants liable to transfer.

(iii) Employees of All India Services.

(iv) Employees of autonomous and semi-autonomous bodies fully financed by the Central Government.

(v) Floating population.

4. No tuition fees will be charged upto Standard VIII. Consolidated tuition fees for 12 months at Rs. 6/-, Rs. 7/- and Rs. 8/ will be charged for Standard IX, X and XI respectively. Pupils will have also to pay a fee of Rs. 2/—p. m. towards the Pupils' Fund, the proceeds of which will be utilised for useful co-curricular activities. An admission fee of Rs. 3/—will also be charged at the time of admission.

5. (a) If more than one child of the same parent studies in Standards IX to XI, the child in the highest class will pay full tuition fees, while the others will pay only half the tuition fee.

(b) No tuition fee is payable by children of teachers employed under the scheme.

(c) No tuition fee is to be collected for the duration of the emergency from children of the JCO's, O.R's and corresponding ranks of the Navy and Airforce as well as such para-military personnel of equivalent rank as may be specified by the Ministry from time to time. No tuition fee will be collected from the children of those killed or disabled while in action on the front during the emergency.

(d) No tuition fee will be collected from children belonging to scheduled castes/scheduled tribes.

(e) Full and half fee tuition fee exemption will be granted at the discretion of the Principal to not more than 20% of the total number of students on rolls in each of the standards, on the 31st July of the year, provided the cost of this concession does not, at any time, exceed 10% of the full exemption. For this purpose the total number of students on rolls will be exclusive of the total number of students exempted under paras (a) to (d).

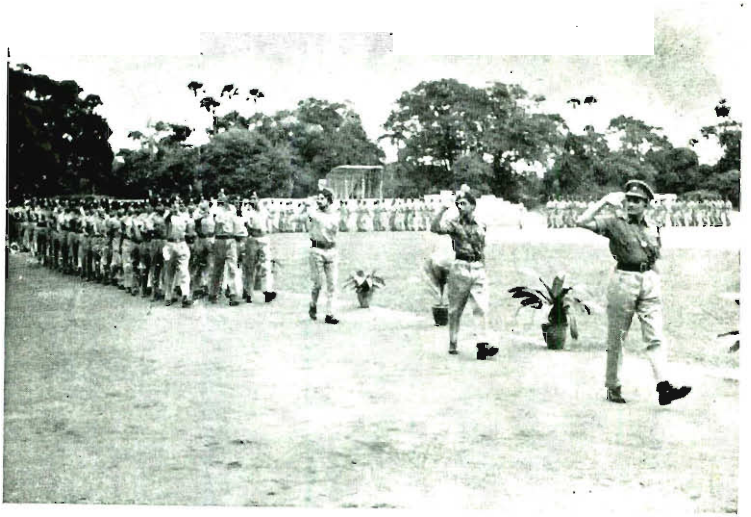
6. The normal school year will be from the 1st of May of the year to the 30th April of the next year. The number of working days in the year will be 220, comprising a total of 1,200 instructional hours, excluding the time spent on examinations, games and sports. The summer vacation will be 50 days. The autumn break, coinciding with the Dasara holidays will be of 10 days, and the winter break will also be 10 days ending on 31st December.

7. The syllabus and text-books for Standards VI to VIII are prescribed by the Ministry of Education; for Standards IX to XI the syllabus and text-books are prescribed by the Central Board of Secondary Education, New Delhi. Students of the 11th Standard will have to appear for the All India Higher Secondary Examination and those who pass the examination are eligible for admission to the degree classes in Arts and Science colleges or the first year classes in professional colleges. A wide range of 16 elective subjects in Humanities and Sciences is provided for in the Higher Secondary classes. Provision has been made for the following elective subjects in the Central School, Madras-36: Mathematics, Physics, Chemistry, Biology, History, Geography, Economics and English language and literature. Sewing, Knitting and Embroidery will be the craft for girl students. Electrical gadgets and their repairs will be the craft for boys.

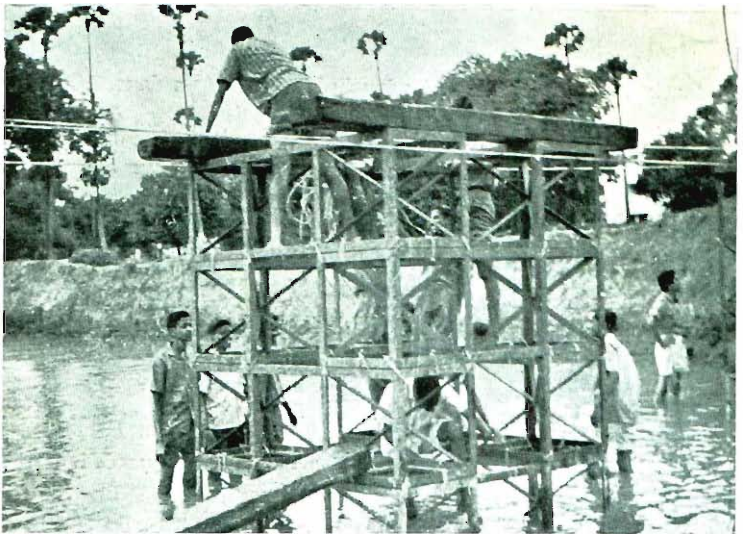
8. The medium of instruction will be English; Hindi will be the second language and Sanskrit, the third language.

M. K. NATARAJAN
Principal.

Prof. R. G. Narayanamurthy inspecting a guard of honour during the Republic Day Parade.



The March Past during the Republic Day Parade.



THE LABOUR.....

.....AND THE FRUIT

Photos of the foot bridge built by the N. C. C cadets of the Institute.

DISTINGUISHED VISITORS TO THE I. I. T. MADRAS

From the month of March 1964:

March	Mr. Tarlok Singh, Member, Planning Commission, New Delhi.
	Mr. D. S. Sastry, General Manager, High Explosives Factory Poona.
	Prof. Y. V. Novojilov, Vice-Chancellor, Leningrad University, Leningrad.
	Prof. A. Authier, Deputy Director, Laboratory for Theoretical Physics, College de France, Paris.
April	Dr. Trevor Williams, Member, Advisory Committee, English Language Book Society, London.
	Lady Gertrude Williams, Professor of Social Economics, Bedford College, London.
May	Dr. (Mrs.) T. S. Soundaram Ramachandran, Union Deputy Minister for Education, New Delhi.
June	Air Commodore R. Sitaram, Officiating Director-General, National Cadet Corps, New Delhi.
August	Messrs. Y. V. Gankovski and V. N. Moskolenko, Soviet Scientists, Moscow.
September	Dr. H. R. Ambler, Scientific Adviser to the British High Commissioner, New Delhi.
October	Prof. Gerald G. Somers, Director, Industrial Relation Research Centre, University of Wisconsin, Madison (U.S.A.)
November	Mr. J. M. Milligam, Ministry of Education, London.
	Mr. S. K. Banerji, Ambassador-designate of India to the Federal Republic of Germany.

December	Prof. Tchaikovsky, Head of UNESCO Mission, Coimbatore.
January—1965	Dr. Martinic, Rector, University of Prague, Prague.
	Prof. C. Whitworth, British Association for the Advancement of Science, London.
	Dr. V. Filkorn, Rector, Komensky University, Czechoslovakia.
	German Industrial Delegation led by Dr. Hans Kuntze, General Manager, Klein Pumpen GmbH, JOHANN—Kleinn.
February	Mr. T. Craig, Assistant Secretary, Association of Commonwealth Universities, London.
	Dr. G. G. Mukhin, Friendship University, Moscow.
	Mr. V. C. Vijaya Raghavan, Consul General of India (designate) Frankfurt (West Germany).
	Prof. V. A. Venikov, Head of the Electrical Systems, Moscow Power Institute, Moscow.

AVULA PRINTERS & PACKAGES, MOUNT ROAD, MADRAS-2.

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(* *Co-cpted as a Member of the Committee.*)