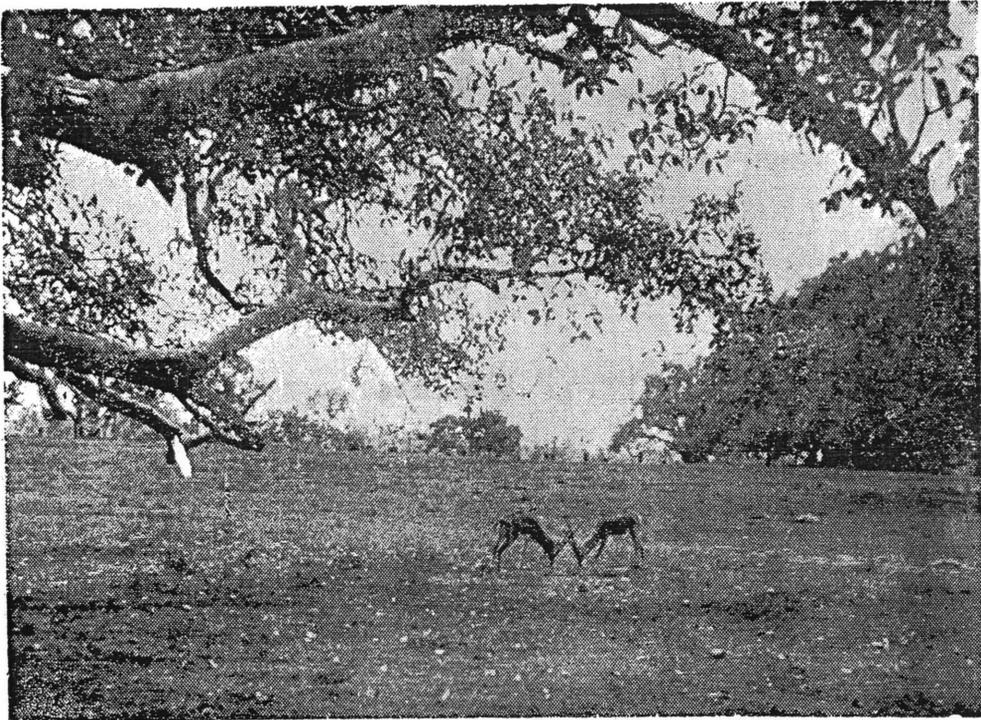

INDIAN INSTITUTE OF TECHNOLOGY
MADRAS

—
Magazine



FIRST INSTITUTE DAY NUMBER

April 25, 1960

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Cover page picture

Deer Park in which our Institute is fast coming up.



Photo by Shri Md. Ghouse.

OUR INSTITUTE MOTTO

SIDDHIR BHAVATI KARMAJA

This is the last line of verse 12, Chapter IV, "The Way of Knowledge" in The Bhagavad gita. It means

SUCCESS THROUGH WORK

The full verse reads as follows :

Kāṅkṣantāḥ karmanāṃ siddhim
yajanta iha devatāḥ

Kṣipram hi mānuṣe loke

siddhir bhavati karmajā

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GUINDY,
MADRAS-25, the.. 22.4.1960.

MESSAGE

At a meeting of Royal Society, London, while demonstrating an experiment on the newly discovered principle of electro-magnetic induction, Faraday, questioned by a lady about the cause of unusual jubilation over a small almost imperceptible deflection of a magnetic needle placed in a magnetic field, is said to have replied "Madam, what is the cause of jubilation over a new-born child?"

It was the vision of future possibilities of new discovery that pleased Faraday on that occasion.

I am happy, to-day at the birth of this new baby, the Institute Magazine. It has got all the possibilities of a new-born - May it develop into a leading Technical Journal of which we may be proud!

I wish the journal a useful life. May it serve the learners and the learned equally well!



B. SENGUPTO

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EDITORIAL

It is with great pleasure that we present this maiden issue of the Magazine on April 25, 1960, the First Institute Day.

The Indian Institute of Technology which is a symbol of goodwill between the peoples of West Germany and India came into being in July 1959. During this period we have had manifold activities in various spheres. In spite of having a meagre strength of 120, today we can look back at our achievements, which of course give us the inspiration to determine to do something still better that would bring glory to our Institute. Needless to mention our humble and earnest contributions are under way towards making our Institute "a rich armoury and treasury for the glory of the Creator and the ennoblement of life."

We have in this issue reports of the various activities of the students during the year and articles on diverse topics contributed by our academic staff and students. A perusal of the reports will show that our activities are multifarious and our achievements satisfactory. We admit that this

being the first issue of our Magazine, there are bound to be shortcomings which may be pardoned.

We take this opportunity to thank the contributors of articles to the magazine and the advertisers for their patronage. We also thank M/s. Gannon Dunkerly for their donation. We are grateful to the Institute authorities Prof. B. Sengupto, our Director, Shri R. Natarajan, our Registrar and Dr. D. Venkateswarlu, our Warden, for all the facilities they have given us this year in the fields of sports, literary and cultural activities. We are indebted to Shri P. S. Srinivasan and Shri D. S. Subramanyam, Resident Wardens for the help and encouragement they have given us in all our extra curricular activities.

We look forward to the next academic session, which we understand, will be in our own spacious buildings set in sylvan surroundings, now getting ready inside the Deer Park, with more teachers on our staff and more students.

We shall also look to still greater activities on all fronts—sports, literature, music and, of course, in our regular studies.

An Editor's Job

Getting out a Magazine is no picnic
If we print jokes, people say we are silly
If we don't, they say we are too serious
If we clip things from other magazines,
We are too lazy to write them ourselves
If we don't we are stuck on our own stuff
If we don't print every word of all contributions, we
don't appreciate genius
If we do print them, the columns are filled with junk
If we make a change in the other fellow's, we are too critical
If we don't, we are blamed for poor editing
But we did all for this Magazine.

Chronicle for 1959-60.

- 20-7-59 Admission of students to Institute and Hostels
- 22-7-59 Commencement of classes
- 29-7-59 Inauguration of Hostels by Shri L. S. Chandrakant, Special Officer
Speech on "Technical Education in West Germany" by Mr. Kickbush of West German Consulate
- 31-7-59 Inauguration of Institute by Professor Humayun Kabir, Minister of Scientific Research and Cultural Affairs. Speeches by Shri Bishnuram Medhi, Governor, Dr. A. L. Mudaliar, Chairman, Board of Governors and Shri C. Subramaniam, Minister of Education and Finance.
- 2-8-59 Lecture by Dr. Krauss, Special Commissioner in West Germany for the development of Indian Institute of Technology, Madras.
- 15-8-59 Independence day Celebrations. Address by Shri K. Balasubramanya Iyer, M. L. C.
- 26-8-59 Farewell to Shri L. S. Chandrakant, Special Officer. Welcome to Prof. B. Sen Gupto, Director.
- 6-9-59 Vinayak Chathurthi Puja Celebrations in the morning. Speech on "Genius of Tagore" by Shri K. Chandrasekhar.
- 16-9-59 Debate in English on "Man Created God".
- 25-9-59 Reception to West German Parliamentary Delegation consisting of Dr. Siemer, Mr. Mattick, Dr. Schsefer, Dr. Daalgruen.
- 4-10-59 Address by Dr. Namaknov, Unesco Professor, on "Technical Education in the U.S.S.R."
- 2-10-59 Mahatma Gandhi's Birthday. Address by Shri C. Rajagopalachari.
- 4-10-59 Saraswathi Pooja celebration.
- 18-10-59 Address on "Democracy" by Dr. Subramanyam.
- 31-10-59 Deepavali Day celebration — Illumination of Hostels.
- 13-11-59 Debate on "Hindi should be the national language of India"
- 3-12-59 Quiz Programme : Quiz Master : Prof. N. Vaideeswaran.
- 5-12-59 Address by Dr. C. P. Ramaswamy Ayyar.
- 20-12-59 Terminal Tea : Chief Guest Prof. P. Sen Gupto.
- 24-1-60 Address by Prof. V. V. L. Rao.
- 26-1-60 Republic Day Celebrations. Annual Debate on "The present generation is politically and socially more backward and more foolish than the last".
- 24-2-60 Annual Athletic Meet
- 24-2-60 Annual Quiz : Quiz Master- Rev. Fr. A. Murphy.
- 25-2-60 Address by Dr. H. E. Hoelscher, Visiting Unesco Professor.
- 7-3-60 Annual Recitation Competition.
- 25-4-60 First Institute Day.
First issue of the Institute Magazine.

I take this opportunity to thank all the speakers and judges and the authorities for their kind co-operation and help. Details of the activities are given later in the Magazine.

R. C. SINHA
General Secretary

INAUGURATION OF THE INSTITUTE

The institute was inaugurated on July 31, 1959 by Professor Humayun Kabir, Union Minister of Scientific Research and Cultural Affairs. The function held in a spacious and decorated pandal in Guindy was attended by a large and distinguished gathering.

Shri Bishnuram Medhi, Governor of Madras, Shri A. Lakshmanaswami Mudaliar, Chairman of Board of Governors of the Institute, Herr von Heyden, West German Charge de Affairs at New Delhi, Shri C. Subramaniam, State Finance and Education Minister were the other distinguished speakers of the evening, in addition to Professor Kabir. Prof. R. Krauss, Germany's Special Commissioner for the establishment of the Madras Institute, flew to India from Germany to participate in the inaugural function. Shri L. S. Chandrakant, Special Officer, proposed a vote of thanks.

Shri Medhi said the Institute would stand as a visible symbol of friendship between the peoples of the Federal Republic of Germany and of India. He said the Higher Technological Institutes, which were veritable temples of learning, would hasten India's march towards prosperity. He said the students joining the Institute have a great responsibility in not only learning and mastering the latest development in technology but also in utilising their knowledge for the development of country's resources and building it up.

Dr. Lakshmanaswamy Mudaliar, welcoming the gathering said that the courses to be conducted covered the field civil, mechanical, electrical, chemical and metallurgical engineering. When fully established, the Institute would have 1500 students in the first degree course and 500 students in the postgraduate courses and research work. It would be a fully residential institution both for students and staff.

Dr. Mudaliar hoped that in future industries in India would realise more and more, as

industries had realised in the more advanced countries that unless opportunities were given to students and post-graduate students to be in touch with the industrial establishment and for those working in industries occasionally to get into touch likewise, with the more theoretical but nevertheless important aspect of technical education in our institutions, the desired progress could not be maintained.

Shri Subramaniam said the technical personnel available in the country were not adequate even to meet the present demands. He hoped the Institute would not merely be a teaching institution but would grow into a research centre from which greater knowledge, new discoveries and inventions would flow not only for the benefit of India but for the people of the world as a whole.

Herr von Heydon said that part of the equipment needed for the Institute had already been shipped from Germany and the rest would be delivered according to schedule. He said in spite of her pre-eminence in industry and in the application of scientific knowledge to material life, Germany believed in the development of man as an integrated being. Before the dawn of the industrial age, Germany had distinguished herself by her contribution to the world of culture in the realms of literature and philosophy. She attached importance to the synthesis of the two aspects of human mind—namely, the irrational matrix, from which arts sprang forth and its rational layer on what science grew. In fact, promoting a balance between the two was an important task, if in midst of rapid material progress in the present world, man should not forget his soul. He said the Madras Institute would not be only technological in character, but it was being founded on a basis, which combined technological studies, humanities and social sciences.

Professor Kabir said the inauguration of the Institute marked the beginning of the fulfilment of a dream. He said they should be grateful to West Germany for their generous assistance. He was sure the German Professors and experts would lay down the traditions of the institution on sound and progressive lines and give it the thoroughness and efficiency, which characterised scientific and technical education in Germany. He was also certain the German experts giving practical training to students would help in raising the standard of the cultivation of manual skill of the students, which was almost neglected in their education.

Pointing out how foreign countries had been helping India in establishing the institutes, Prof. Kabir said such co-operation and collaboration had in it an element of competition in excellence.

The Union Minister said though the Madras Institute was third to be started, it had the advantage of starting straightaway the five-year integrated course, which the other institutions could not think of at the time of starting. He said this integrated scheme would soon become the pattern of engineering education in the country. In the Madras Institute students would alternatively attend theoretical and workshop lessons. The "sandwich system" would help to give the students that re-orientation, which sometimes had to be secured after they took their degrees, by actually working in industries.

The Minister then dealt with what he called imbalance between degree and diploma holders and between graduate and under-graduate teaching in engineering education in the country. He said in 1947-48 about 3,000

students entered degree courses and about 4,000, students entered diploma courses, thus the ratio being almost 1 : 1. The number of persons in the P. G. courses in 1947-48 was negligible, not even 100. To-day that number was about 500, so that the imbalance between under-graduate and graduate teaching had been to some extent rectified, but not sufficiently. The imbalance between diploma and degree holders had also been rectified to some extent. As against the ratio 1 : 1, it would be 1 : 2 by the time the Second Five Year Plan was over. There would be about 25,000 entering diploma courses as against 13,000 entering degree courses. Prof. Kabir said there should be a still wider expansion at the diploma level. He hoped in the Third Five Year Plan comparatively greater emphasis would be laid on this aspect.

The minister felt that they had not yet paid adequate attention to education at the post-graduate and research level. Of course, the industries in India offered co-operation in this respect but not adequately. Greater collaboration between industries and research at all levels would be advantageous to the industry and the country as a whole,

In the "age of the engineer" today, the role played by the engineer was of far-reaching consequence, because the introduction of new technological programme very often changed the economy of the country. He also referred to Germany's contribution to development of philosophy, music and literature along with her achievements in the field of science and said the eternal verities of life should become part of the student's mental make up.

Extracts from ' THE HINDU '

AMBER—OLD, YET NOT FORGOTTEN

Y. SAHAI.

“Oh wonderful, wonderful, most wonderful and yet again wonderful.....”

In between the Thar Desert and fertile plains of the Ganges lies a medium size society full of ancient wonders, a city full of stories of brave, of wars; a city that attracts tourists by the hundreds, a city they call Amber (Old Jaipur).

Tourist to the capital never fails to complete the scalene with Delhi, Agra and Jaipur as vertices and he prefers to do the mileage by car for the roads that form the sides of the triangle are well defined, full of beautiful scenery and do not cause damage to the springs of the seat of the car or the tourist. As he comes from Delhi he makes it a point to halt at Amber for a few hours to admire the works of the past that have lived to be liked by the present.

His car halts at the parking place provided and he mounts the back of a decorated elephant. A “moohwat” is there to guide the elephant, so there is no need to panic. At his orders, conducted by means of a sharp harpoon, the sitting pretty rises and soon you are sitting on top of the world. Those of you who have seen “The wind cannot read” know what happens next but I will describe it for the benefit of those unlucky who have missed the movies. The tourists are treated like maharajas of the past—a one string fiddle plays a tune (featured in the movie) while the huge mass plods uphill. The ride is expensive but highly enjoyable and as they draw near the palace gate the excitement reaches a climax. Will he make it? Will we have to bend our heads? Will we go through it alive?

But it rolls coolly through the gate like an ivory ball on the billiard table.

As you reach the actual palace the guide is busy worrying you with details about this and that but you hardly notice his blabbering for you cannot take your eyes off the beauty that is singular about this palace. The “moohawat” digs the harpoon in the great neck and the world under you sinks. You climb down the reliable rope ladder. The elephant is up again. He salutes you like only he can. You take a snap of this state-ly vertebra. Then you are asked to climb a flight of stairs and get lost in the building which was there before your great grand father’s thumb sucking days. There are many things of interest in this heavenly place but I will not attempt to catalogue them. However it would be a pity to overlook the temple of Sheela Devi (Kali) made entirely of black and white marble. It is a tribute the old Raja’s of Jaipur paid to their beloved goddess. The beating of drums and ringing of bells produce the best atmosphere for offering prayers.

The “Balidan” (sacrifice) is a ceremony worth a watch, if you can stand the sight of blood oozing out of a goat’s neck as life struggles out of its body. The animal to be offered is anointed with “tilak” and its horns are tied to a string, the end of which is in the hands of a priest. A silver tray is held under the head. The devotee holds the sword high in the air and in one stroke rids the body of its head. The head must go in one stroke and it must not fall on the ground. The tray and head and wine are then offered to the goddess.

“Sheesh mahal” (hall of mirrors) is another place of interest. Here pieces of coloured mirrors are embedded in the ceiling and walls of a room so that when a candle is lit thousands of images are visible.

The corridors are ramped and not many stairs are found, because in the good old days the raja’s preferred a carriage to a walk.

At the level lower than the palace lie the numerous ruins of buildings that made up the old city of Jaipur, while at a higher altitude can be seen an old fort, Jaigarh, which till very recent times was used as the state treasury. The fort is not open to public and it is alleged that the place is guarded by a clan of ancient Rajputs with typical beards. Even the Maharaja was not allowed to visit this fort whenever he felt like. The privilege was given to him only once in his life time and then he was allowed to take only one thing (whatever pleased him most). The choice was a mark of his character. The present Maharaja, who has already celebrated his silver jubilee long ago has not decided to visit this place.

Amidst the ruins of the old city is another lovely temple, Mira Bhai’s Temple, which is

said to contain the idol of Lord Krishna which the celebrated woman worshiped. It is said that a Maharaja of Amber brought it from Chitor, acting upon a warning in a dream, to save it from the unholy hands of the moghuls when the great city fell into the mogul’s hands.

A small lovely lake is situated at the base of the hillock on which the palace is built. The platform of this artificial lake has become the site of a beautiful garden. In the middle of this lake is perched a garden island which is built as a series of decenting platforms. Each platform has a pattern of hexagonal sections in which are placed different coloured flowers. Water falls from one platform to the other over shelves in which coloured lights can be placed. When illuminated, it is a sight to behold. But of course those days are gone and the sections have no flowers and the shelves, no lights.

One may be inclined to believe that because of the advance of science, the advent of the use of atoms for peace, the launching of sputniks, that the world today is more advanced than the world of the past but when one looks at a place like Amber, doubt creeps in and one often wonders.

MY TEAM TO MARS

R. NATARAJAN, I. A. S.

The Lunik and the Rocket have brought the Sun, the Moon and the Constellations almost to our doorstep. Add to these, the flying saucers which have been described as manned flights to the earth made by the men of Mars. It would appear that we are on the threshold of an era of interplanetary travel. It was only the other day that the Soviet pennant was planted on the Moon ; it will be only a matter of time, I fancy, before a cricket team lands in Mars.

Ten

Choosing a cricket XI of the choicest vintage of the earth to challenge Mars has been a popular pastime with cricketers and critics alike. Neither Fingleton nor Neville Cardus was able to resist the temptation to set down his best team. When this is so, it will be little surprise that I fell an easy prey to the Magazine Editor on a fateful Friday when I had not many files to fiddle with.

I know that naming a team that will be acceptable to one and all is next to the im-

possible. In fact I have often wondered how these self constituted "selectors" have manoeuvred themselves off the range of ripe tomatoes and rotten eggs. With this apologetic preface, I name my team below :—

1. R. Benaud (Australia) — Captain.
2. Peter May (England) — Vice-captain.
3. M. O'Neill (Australia).
4. M. C. Cowdrey (England).
5. G. Sobers (West Indies).
6. R. N. Harvey (Australia),
7. Hanif Mohamed (Pakistan).
8. J. Waite (South Africa) —Wicket-keeper.
9. A. K. Davidson (Australia).
10. F. S. Trueman (England).
11. H. J. Tayfield (South Africa).

My nomination of Benaud as skipper, I venture to say, will be voted for by all. He led a battle-weary, sulking Aussie team to victory over the much vaunted, all conquering English side of Peter May. We had occasion to catch glimpses of Benaud's astute captaincy in the recent Indo-Australian test series. His move in bringing on the change off-break bowler Harvey to dismiss a confident Milka Singh in the Indian II innings in the Fourth test at Madras will be remembered as a master stroke of willow-craft. "Captaincy" said Doug Jardine, "requires practice". Yes, it is no doubt true. But captaincy has also another fount and that is cricket genius, which Benaud has in "Munich beer Mug" quantities. Besides being an aggressive captain, Benaud is now the best slow leg-break bowler in the world as also a hard hitting batsman and a grand gully fieldsman.

None will dispute the passage of May or Cowdrey. May comes into the side as one of the three finest batsmen in the world. Cowdrey is the heir of Hammond. The West Indians knew it only too well during the recent "Soda bottle" series in the Caribbean.

Sobers and Harvey are two of our finest left-handed batsmen. When these two are at the wicket, pens wag and poesy takes to its

ethereal flight. The mantle of Bradman has fallen on the broad shoulders of O'Neill. No Mongol hordesman or Tartar swordsman has been more savage than O'Neill in the annihilation of the opposing bowlers.

After the retirement of Tallon and "Jack in the Box" Evans, the pride of place as wicket-keeper should go to John Waite of South Africa. Besides possessing a steady pair of gloves, Waite wields the willow to purposes. He is a good opening batsman.

My opening bowlers will be the fiery Fred Trueman of England and Australia's Alan Davidson, who swings the ball like a champion. The latter is an aggressive batsman as well and such an excellent slip fielder that he has earned the sobriquet of "The Claw" for bringing off catches that win matches. Trueman is a match winning bowler. Much water has indeed flowed since Keith Miller dismissed him as "Just another bowler."

My opening batsmen will be Cowdrey and the young Hanif Mohamed of Pakistan. Sir Leonard Hutton recently described Hanif as one of the two best openers in the present day world. Cowdrey has shown his skill as an opener in no uncertain manner during the recent Anglo-West Indies test series.

The spin-foil to Benaud will be off-spinner Hugh Tayfield who has recently emerged out of retirement. Fingleton, while describing Jim Laker of "Lakerloo" fame as a "grand bowler, chose to describe Tayfield as "great" bowler. While Laker required the "green" English pitches to aid and abet his leather-sorcery, Tayfield trundled on sun-baked wickets and plied his off-spinner's trade with princely profits.

I can even now hear murmurs of dissent. Is Worrell not included? Why not Fazal or Gupte? What about Kanhai of the West Indies? I have no objection to your taking these also along—only please make sure before hand that the men of Mars will not protest against playing a side of fifteen.

“ Q ”*

P. C. GUPTA,

Life is no longer a mystery. It is just an integration of queueing up on mental, moral and physical planes. He that knows the art of queueing up is of the greatest use to humanity today.

A queue must have a definition. Yes: we can define it as an assembly of men and women, one behind the other, with some common object, be it purchasing a ticket from a booking window, paying of dues at I. I. T. fee counter, taking dish from the mess counter or waiting for an entrance into heaven or hell. What is called a file in scouting is termed as a queue in daily life. So one need not start day dreaming of fair sex simply because queue means a plait of hair also.

It has got a well defined and universally respected set of conventions. You have to stand behind or by the side of the person who reaches the particular place earlier than you. If there is an accident on the road and those who have nothing else to do are eager to have a first hand information of the mishap, they should make a queue. You should not try to elbow in your way and reach the person involved, simply because she happens to be your better-half.

Then there are certain bye laws at times more important than the constitution of a country. While boarding a bus, seats are provided first to ladies and then to (gentle) men. If the number of ladies exceeds the number of vacant seats, gentlemen, sitting already will offer the ladies their seats. Queue sense should be coupled with common sense.

No statistical data are available to judge where India stands in this particular field. Yet some estimate can be made from the observa-

tions while boarding a train they would not wait for the inside passengers to come down first with the result that the stoppage time is wasted in quarrelling and when their train has passed, the inside passengers learn that their little Minu is missing, while the outside passengers on the platform discover, that they have been relieved of one or two bundles. And, lo, Motumal's pocket has been picked. What happens when a young man's suit case is exchanged with that of a girl, can be appreciated from personal experience only.

Queue is a miniature country. Look at your neighbour in the queue. His gold rimmed glasses, dhoti and shawl remind you of some great man. Then there is the smart man, who, without knowing communism at all, opens his umbrella, when it rains in Moscow. Next is Bala Suraj Mal who will purchase a ticket for Gujerat. He seems to be burning in 'Virahagni,' for you can see smoke over his pagri but he would say that the comrade has thrown his burning cigarette carelessly over his head. Please be alert lest you miss a glance of Miss with her skilfully braided hair, fine saree, the microscopic wrist watch and the magnifying glass in her vanity bag if she needs to see the time at all. Here comes Mdm. Defarge buiting the features of the so called humanities. Why is this simple woman crying? She is leaving the queue as her little son is missing. Thank God! she has got her son back. He went on kicking the ball of wool, which fell down from Mdm Defarge's hand, in search of a goal.

Under ordinary traffic regulation you can overtake a vehicle by passing in the right only. But look at Mr. Pigmy who goes ahead of

ILLUMINATION DESIGN - A SURVEY

B. S. V. GOPALAM, M. SC.

Illumination engineering is a technology of optics. There are many phenomenological views of illumination. This can be looked upon in three aspects; (i) developmental (ii) application and (iii) controls. The physicist's approach will be purely with the theoretical aspect while the engineer's point of view is purely on the applications side. An applied physicist is a *via media* between an engineer and a physicist and here I wanted to write the illumination as viewed from an applied physicist's point of view.

Illumination is the light falling on objects. This topic is connected with various terms such as the luminaire or a light source, brightness, luminous intensity and luminous efficiency of the light sources. A non self luminiscent body can be illuminated by a luminaire. The second part of this is with respect to the observation with the human eye i. e. light as received by the eye. This involves the physiological aspects of the human eye viz., brightness, glare, relative luminosity of the eye, stiles crawford effect and purkinzo phenomena. Glare is the undesirable form of brightness which causes annoyance.

According to the intensity of the source it is customary to call it as hard, medium and soft and with some other names. The developmental side of the illumination has its origin from the prehistoric days as production of fire by friction. The sequence follows with oil candles, lamps, lanterns, incandescent lamps, vacuum filament lamps, vapour lamps and now mercury tube lights with blended types also. These have some accessories as fittings and louvres which control the light in required fashion.

The illumination in its essence according to its type of use can be classified as

(i) novelty lighting (ii) interior (iii) exterior lighting and (iv) directional.

(i) *Novelty lighting* : Decorative lighting used for ornamentation and consists illumination as those in marriages, fountain lighting and bed room lighting.

(ii) *Interior lighting* : Lighting of theatres, auditoriums, show rooms, laboratories, workshops, reading rooms, drawing rooms and lecture halls, lighting of indicators etc.

(iii) *Exterior lighting* : Street lighting, flood lighting for dramas, games and sports.

(iv) *Directional lighting* : Search lights etc.

The first type of lighting is relatively simple and can be had according to the liking.

The problems confronted with the latter three types are (i) shadows (ii) glare (iii) electrical and luminous efficiencies of the sources (iv) efficiency and the directional coefficients of the fittings and their accessories.

The present day popularity is for the tube lights because of the following obvious advantages: (i) higher efficiency and lesser consumption of power (ii) lesser formation of shadows (iii) cooling sensation (iv) uniformity of the light (v) and reduction of most of the glare. These tube lights which are popular now had their electrical efficiency increased by using coiled coil filaments with high work functions, chokes and condensers. They require starters to initiate glow. The intensity and colour then depend upon the material and quota of phosphor.

Efficiency of the fittings depend on the following: (i) room coefficient which depends on the geometry of the room to be

illuminated (ii) reflection coefficients of the walls, floor and the roofing (iii) geometry of the fittings, whether they are hemi-spherical parabolic or hyperbolic. (iv) reflection coefficient of the fitting itself, whether it is diffuse, translucent, transparent or opaque. This indicates whether light is scattered, transmitted or reflected.

Therefore the illumination falling on a point as viewed by a person is a function of (i) the position of the luminaire (ii) efficiency and intensity of the luminaire (iii) efficiency of the fitting (iv) the inclination of the fitting (v) the inclination of the fitting with respect to the point under consideration (vi) the efficiency of the eye

(vii) the reflection co-efficient of the space at the point.

(viii) humidity factor.

Special types of lighting as is the lighting of roofs and indicators classify the luminaries as :

- (i) Direct
- (ii) Semi-direct
- (iii) Semi-indirect
- (iv) Indirect.

A designing engineer for illumination therefore should survey the part to be illuminated. He is to determine the room co-efficient, efficiency of the lamps and fittings. Next he is to write down the standard permissible illumination for the particular purpose (i. e. reading or theatre) from the ELMA Bureau specifications. Next depending on the required position and inclination and its property he is to calculate the number of sources that should

be arranged in a regular fashion that are necessary to produce the said standard illumination on the study plane. By arranging adjacent tube lights in perpendicular directions shadows can be avoided. Avoidance of sharp corners and cracks minimises the glare.

Street lighting and floor lighting in real sense are far more difficult and beyond mention. For the analysis of flood lighting for infinite room co-efficients point-by-point method is useful.

The often troubled experiments in the lamp manufacturing companies are the determinations of the efficiencies of the fittings. For this they have to find the brightness contours, polar plots of illumination in at least two orthogonal planes, horizontal and vertical and determination of M. H. C. P., M. S. C. P., M. H. S. C. P., and the reduction factor of the sources. For this the very handy instrument is the Weston photo-electric cell calibrated in lumens. The second and most important factor is the determination of the reflection factors of the walls, floors and roofs in and on the spot survey of the interior or exterior with its external disturbances.

The author thanks Radio Lamp Works, Bombay for allowing him to go through the design features of illumination of Churchgate Station, Metro Cinema and Atomic Energy Establishments during his practical training in assembling and testing of lamps and instruments. This article is based on the information gathered in the course of practical training.



BRAIN TWISTERS

B. S. BALIGA.

1. A Happy family. (Time 1½ min.)

In the Brown family, each daughter has the same number of brothers as she has sisters, and each son has twice as many sisters as he has brothers.

How many sons and daughters are there in the Brown family?

2. Sally's Dilemma. (Time 2 min.)

Sally said "The man I marry will be tall, not fair, rather stout, foreign and will never wear glasses and limp a trifle."

Andri is a tall, dark, foreign and wears glasses but does not limp.

Pedro is not short, wears glasses and limps, is not dark and is by no means stout and is foreign. David walks with slight limp and not too stout, is not short and is certainly not dark. He wears glasses and is decidedly Russian.

Whom will Sally marry if these three men are her only chances?

3. Edna's mother. (Time 2 min.)

Edna is just $\frac{1}{6}$ as old as her mother. Edna's mother's age when divided by 2, 3, 4, 6 & 8 always leaves one remaining year, but when divided by 5, there is nothing left over. How old is Edna?

4. Some gang. (Time 2 min.)

A party of 10 consists of 2 grand fathers, 2 grandmothers, 3 fathers, 3 mothers, 3 sons, 3 daughters 2 mothers-in-law, 2 fathers-in-law 1 son-in-law, 1 daughter-in-law, 2 brothers and 2 sisters. How is this possible?

5. Capital Stuff (Time 3 min.)

Mr. Rau and Mr. Das have exactly the same amount of money. Mr. Prabhu is however, richer than Mr. Shenoy. and Mr. Shenoy is richer than Mr. Pai. Mr. Kamath who is poorer than Mr. Das, but richer than

Mr. Pai is not as rich as Mr. Shenoy. Mr. Das is poorer than Mr. Nayak.

Is Mr. Pai richer or poorer than Mr. Das?

Is Mr. Kamath richer or poorer than Mr. Rau?

Is Mr. Nayak richer or poorer than Mr. Sheneoy?

Is Mr. Rau richer or poorer than Mr. Pai?

Is Mr. Shenoy richer or poorer than Mr. Kamath?

Who is the richest?

Who is the poorest?

6. Deserved. (Time 5 min.)

Mr. Sharma gave a cheque in full payment for some work which I had done for him. The cheque was in three figures and for much more than my bill; so, naturally, I was very pleased. As a further gesture of his great generosity, Mr. Sharma told me that if I promised not to cash the cheque (which I had not seen yet) he would give me the difference between the product of the three digits and their sum and he assured me that this difference would not be a small number. Of course I jumped at this but when I saw the cheque I realized what a fool I was. How much was the cheque?

7. Trouble in the Bath room. (Time 4 min.)

The cold water tap in the bath tub can fill the tub with water in 6 minutes and 40 seconds. The hot water tap can fill this tub exactly in eight minutes. The tub when filled, will empty in 13 minutes when the stopper is removed.

How long will it take to fill the tub if both faucets are going full blast and the stopper is out?

8. Alone in the Crowd. (Time 6 min)

"Last night", said Harry, "I dined with step-brother's nephew's father, my father's

mother-in-law's husband and my step-mother's father-in-law, yet I dined alone."

Harry told the truth. How is this possible?

9.....Kst..... (Time 2 min.)

In a certain word of eight letters, KST is in the middle, in the beginning and at the end. There is only one K, one S and one T in the word. What is the word?

ANSWERS

1. Four daughters and three sons.
2. Sally remains an old maid.
3. Edna's mother is 25, Edna is 4 years and 2 months.
4. The party consists of two little boys and two little girls, their mother and father and both their mother's and father's parents their two grandfathers and two grandmothers.

5. i) Poorer. ii) Poorer iii) Richer. iv) Richer v) Richer vi) Mr. Nayak vii) Mr. Pai.

6. The cheque is Rs. 123. $1 \times 2 \times 3$ equals $1 + 2 + 3$ and their difference is zero which is not a small number.

7. 5 minutes.

8. Harry married the mother of his father's second wife and had a son: His stepmother also had a son. Harry is therefore the father of his stepbrother's nephew, the husband of his father's mother-in-law and the father-in-law of his stepmother. He is also his own grandfather.

9. The word is *inkstand*. KST is in the middle. IN is at the beginning (In the beginning) and And is at the end (AND at the end.)

The Charms of Music

P. S. Sundaram.

When an evil spirit from the Lord troubled Saul, King of Israel, his servants said to him "Let our lord command his servants, to seek out a cunning player on an harp and it will so happen that when the evil spirit is entertained with music, he shall be well." Saul followed this advice and when the fit of madness was upon him next time, David played to him with his harp, thereby refreshing and driving away the evil spirit from him. Saul was enchanted with his recuperation and he made David his heir. This is a story from the Bible, illustrating the charms of music.

The middle age found renaissance, flourishing in all its glory, the arts and culture. Bach, Beethoven and Mozart, were but the products of that age of culture. The literature is full of testimony to the charms of music.

In "The Merchant of Venice", Lorenzo, that dreamy poet of nature and the artistic

lover of Venice, being struck by the atmosphere of beauty and tranquility around him in the garden of Portia, dilates upon the melody of music.

Plato thought that music should have a great place in the education of the young, at so high a rate did he put its influence on the mind. His is an ideal in this matter which has rarely been reached.

Music soothes the mad elephant, comforts the weeping child, stimulates the marching soldiers, elevates to dizzy height the connoisseur of music and lends character to the man who exploits it artfully. In fact music is classed among the sixty-four literatures ascribed to the Goddess of knowledge. The man of music is honoured everywhere for he is imparting to his fellow men a divine melody and helps them to drown their worries in the ocean of music.

ONE WORLD STATE—ONLY SOLUTION TO WORLD PEACE

R. C. SINHA

The idea of one world state is often regarded as a fantastic utopia but in fact it is like small seeds which contain life and will sprout and grow producing flowers and fruits when showers of grace descend upon it from heaven. One world state is an open challenge to all the ugly complexities of the world who, like rounding wolves of Modern Era, scent human blood and howl to skies.

The one world state is more needed to-day than at any other time. Two lights are shining upon the horizon of the earth, one which will bring about the complete annihilation of mankind. The other will bring about an everlasting peace, prosperity and happiness to our earth. At present there is hardly any peace on earth. Even where there is some kind of peace, it is a troubled peace with fear of war and preparation for war. The underlying principle is "If you want peace, be prepared for war".

Every one is living in a perpetual distrust. Every sound of a footstep, every rustle of movement in the neighbourhood sends a thrill of terror all around. The only moral law of the earth is that all people must strengthen their physical, moral and intellectual resources to their utmost to defeat one another in the wrestling match of powerfulness.

"In human history, it is often the days of great tribulation and deep despair that are the prelude to a time of enlightenment. The scale of our distress is sufficient to prompt the question whether we have not, on the presumption of nationalism and pride of material achievements brought the world towards the verge of annihilation. We have followed false roads in blind confidence" (Dr. Radhakrishnan).

"Almost it seems that some terrible destiny drives the humanity to these ever-recurring havocs. We are caught into the claws of the devil from which we cannot easily escape. We are being choked to death without offering any resistance. It is the continuous and stupendous pressure of this under which the world is groaning. We live in the dense poisonous atmosphere of worldwide suspicion and greed and panic". (Dr. Rabindranath Tagore).

Naturally, the question arises "Is there no escape from this devil dance of pillage and murder of innocent women?" Must we subscribe to this 'hell-fire' and witness the whole humanity shattered into bits? No, certainly not. The only solution is the establishment of one world state. It is evident that as we have done in the case of individuals to stop robbery, violence and killing by the enforcement of law and order, we can do in the case of nations too by making some supreme laws by which they would be governed. Two nations can always settle their differences by means of peaceful negotiations. But if they are unable to do so, there should be some arbitration.

The freedom of an individual is always increased and never diminished by his acting accordingly to law as he can carry on his normal obligations without having any fear as the law is there to protect him. Can't the same hold good in the case of nations also?

One world state may merely mean the extension of the present United Nations Organisation, giving each national unit freedom to fashion its destiny according to its genius but subject always to the basic covenant of the

world state. The people having seen the U. N. functioning do not have very high hopes but they forget that U. N. has got very limited powers. The five great powers with veto at their command always dictate the U. N. They are above all that the U. N. can do. But one world state will be having no such distinctions. Before that, all nations will be equal and with the supreme powers vested in that, it will be able to administer justice without ill-will, favour or affection.

H. G. Wells once remarked 'Indian community is a community of communities'. We are managing our affairs in a very fine manner. To cite an instance, in a federation of the world the various countries will more or less be similar to various states in the Indian Union. What I mean is reducing the various states to the position of individual units in a federation of states in which policing, peace and order are federal subjects and in which all states enjoy internal autonomy without the authority or the means of aggression, economic, social or political. It will be a federal Government with a unitary bias. But for all this we will have to make the world Government a "properly representative and equitable World Federation of Nations".

"What is a Nation? It is the aspect of a whole people as an organised power. This organisation incessantly keeps up the insistence of population at becoming strong and efficient." When the humanity was not under the Government of the organisation, the elasticity of change was great enough to encourage men of power to feel that they had their destinies in their own hands. The same is true of the powerful nations of the day. They too must be organised and certain curbs imposed upon their power.

H. G. Wells a great supporter of the World Government consider it as the next stage of history. He has written in his book entitled "Outline of History" a lot in favour of one world. "There can be little question that the attainment of a federation of all humanity, together with a sufficient measure of social justice, to ensure health, education, and equality of opportunity to most of the children born into the world, would mean such a release and increase of human energy as to open a new phase in human history. The enormous waste caused by military preparations and the mutual annoyance of competing great powers and the still more enormous waste due to the under-productiveness of great masses of people either because they are too wealthy for stimulus or too poor for efficiency would ceaseTo picture to ourselves something of the wider life that world unity would open to men is a very attractive speculation. Life will certainly go with a stronger pulse, it will breathe a deeper breath, because it will have dispelled and conquered a hundred infections of the body and mind which now reduce it to invalidism and squalor."

In this moment of international crisis which threatens peace and complete annihilation of mankind the banner of one world state can alone stand aloft, as a beacon of hope to this tottering world of today with its rich ideals of peace and non-violence on which depends the salvation of mankind. The greed of material gain among nations will give way under its policy of eternal peace and out of it will arise a new creation and not a mere repetition, offering as its own tribute to the world and to the welfare of life. "Where Nations shall not raise their swords against Nations neither shall they learn any more of war."

A Society Hero

M. K. Suri.

I shall reflect upon a mischief monger and peculiar figure in a class of students.

Look at his responding to call 'Ye-e-S-S-Sir-r-r' instead of 'Yes Sir', 'sleeping on the last bench generally screened from the professor's view by a regular row of heads.

He has his own definitions of things. *e.g.* ponds cream he calls face polish and books he calls as 'liberary prisoners' which are released on bail occasionally. Student for him is a cart overloaded with books. Men, he says are beasts with reason and women beasts without reason.

His pronounciation is also strange. Judgment is pronounced by him as judge - a - minute and if you ask, he says judgments are hasty.

After great research and micro analysis, I have come to the conclusion that he is an Atom Bomb, a terror for all. As he sings songs, all crows and sparrows are scared away, such is the force of his musical and deep voice.

His 'Hello' nay cause young dames or gentle beauties a heart failure. When he happens to descend a staircase, traffic is stopped. He moves in such a way that stairs cry with pain and agony. I would rather call him a 'Moving Earthquake'. For instance, when this little Earthquake enters laboratory, all bearers remain on guard and when he touches a library shelf, books fall from it like dead leaves.

He says that this world is transitory but believes in eating, drinking and being merry. He can readily clasp a dagger to decide whether Nuton is more beautiful than Madhubala or Dev Anand is more gallant than Raj-Kapoor.

He is humorous and as such loved and respected by all his mates. His reply to one of his friends who was very much insistant on the age of the girl to be married by him was that he should marry two girls of 12 years each.

He is president of the 'Smagglers' whose main aim is to spirit away lunch boxes from lockers with his 'master key' and serve those who come without it.

His is an adept in art of mimicing and basking and if ever in any function, you hear such peculiar calls, you must at once know that he is at work.

In some meeting or gathering, he is the first man to hoot the speaker and make the people laugh by his awakward remarks and unnecessary comments. He feels highly elevated when appreciated by his friends for jokes and mischiefs he makes.

He usually produces various theories, *e. g.* man must not use automobiles but devise a system by which they can ride each other.

Being an important figure and pretty good laughing stock he has achieved the title S. H. 'society hero' but not Specific Heat.

ABOUT OUR LIBRARY

P. S. SRINIVASAN, B.A., DIP. LIB.

Thanks to the Ministry of Scientific Research and Cultural Affairs, Government of India, the then Educational Officer too, true to the dictum that the library is an integral part of an educational institution, ordered books to the value of Rs. 80,000/- in March 1959 itself, that is, two months before our Institute started functioning. Thus it was that even from the beginning, books are readily available to the teachers and students of the Institute for consultation and loan. There are now about 4,000 books got by purchase and 1,000 books got as gift from West Germany. It is hoped to classify and catalogue them on modern lines before the beginning of the second year. About 200 periodicals in Mathematics, Physics, Chemistry and Chemical Engineering are current. There is also a good collection of reference books like encyclopedias, dictionaries, directories and handbooks. Apart from books on Sciences, there is a representative collection of books on Humanities which everybody would like to read. Some interesting books on Humanities available in the library are mentioned below.

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|---|---------|--|------------|
| 1. Lands and peoples | 7 Vols. | 8. Lupton: Treasury of modern humour. | |
| 2. One hundred great lives. | | 9. Williams: Encyclopaedia of wit, humour and wisdom. | |
| 3. Grigson and Gibbs-Smith: People, places and things | 4 Vols. | 10. Sen: Eighteen fifty seven. | |
| 4. Life: The World we live in. | | 11. Gandhi: Collected works | 2 Vols. |
| 5. White: World of pattern. | | 12. „ : Autobiography. | |
| 6. Durant: Story of civilization. | 5 Vols. | 13. Tendulkar: Mahatma | Vols. 4-8 |
| 7. Friedman: Speechmaker's complete handbook. | | 14. Nehru: Autobiography. | |
| | | 15. „ Discovery of India. | |
| | | 16. „ Bunch of letters. | |
| | | 17. „ Speeches. | 3 Vols. |
| | | 18. Tacherias: Study of Nehru. | |
| | | 19. Radhakrishnan: Occasional Speeches | |
| | | 20. Lin Yutang: Wisdom of India. | |
| | | 21. Gunther: Inside India | |
| | | 22. „ Inside Africa | |
| | | 23. „ Inside Europe | |
| | | 24. „ Inside Rassia Today | |
| | | 25. Brunton: In search of secret India. | |
| | | 26. „ Search in Secret Egypt. | |
| | | 27. Traveyan: Illustrated history of England | |
| | | 28. Toynbee: Study of history. Abridgement | 2 Vols |
| | | 29. Churchill: Second world war | 3 Vols |
| | | 30. „ ; History of English-speaking peoples | 4 Vols. |
| | | 31. Churchill: War speeches | Vols 2 & 3 |
| | | 32. Works of Scot, Dickens, Hardy, Tagore, Shaw, Buck, Doyle s, Lawrence Maugham and others. | |

ON HUMILITY

T. GOPICHAND, D. Sc.

It is not my intention to give an exhaustive exposition on humility. To squeeze in some thought provoking sensations regarding humility, on the other hand might preserve its beauty without committing to serious definitions.

All religions, without any exception proclaim 'Do not do unto others, what you may not like others to do unto yourself'. Religions might differ in their creed, ritual or even dogma, but unequivocally stick to the above principle.

What is humility? Humbleness in spirit; freedom from pride. Both connote the literal meaning. But there is something more when anybody uses it in daily life. It is in this aspect it is more like truth, good etc., which can only be relatively adjudged.

Let me connect the biblical saying quoted earlier and the literal meaning of humility through an example. If my son in a playful mood sits under a table, pulls the table cloth with the intention of hiding himself and in the process if the radio set comes down with a bang, my first impulse will be to catch him by the shirt collar and to administer him a neat thrashing. The impelling reasons are many and one of them is that my pride is hurt. If I am free from pride (the wish to have the behaviour of an adult from the boy?) and if I put myself in the position of the boy for a while I will certainly act differently. I might even gulp down the financial loss and in all sincerity advise the boy to be careful even while playing,

The impulse 'to put yourself in the place of some other person' is the essence of humility. The other side of the coin is the biblical saying quoted earlier.

Pride is essential. It gives confidence to a man. It is a stimulus for progress. But one will know the value of a thing only when he can sacrifice. Hence to be free from pride ennoble a man. It is to be recognised that humility is not a negation.

Man is a social being. If Science and Technology frees him from economic bondage, the spiritual and religious attitudes help him to be socially secure. Humility is the instinct developed by humanity, in its conscientious effort towards progress. By all means it should be retained and nourished by humanity.

Can it be practiced true to the spirit of the word? I am afraid humility is only an ideal standard with which we can compare our actions now and then. If every action of ours is to be processed through the agony of contemplation, we cease to be human beings. Impulses good and bad shall dictate our actions. But now and then we should assess our action. There under the pavillion of humility our debit and credit should be examined. We will be enlightened and ready for a second round. In short it makes a nice feed-back mechanism.

To be free from pride and to be humble in spirit is easily preached then practised. It is a habit to be acquired through contemplation, an impulse to be developed, a goal never to be reached. Nevertheless, it is essential to be aware of it. A saint might need it a number of times, a good man might need it once in a year, but certainly every man will need it at least once in a life time.

LETTER FROM MR. LAMDA TO MISS THEETA.

K. NAYAK.

Dated: 25-4-1960.

Dear Miss Theeta,

It seems as it were the other day morning - though so many years have passed since we last met. I remember (and believe you too, will) I saw you in a circle of your friends like Alpha, Beta, Gamma etc., the parabola of your legs, the hyperbola of your elbows and the ellipse of your favourite vanity bag all pleased me so much that my heart broke into 3,14159 ... for you.

I know fully well that your beauty is a hyperbola to which my love is merely an asymptote (I am afraid if at all they will intersect even at infinity), yet wishing you the best of luck, I will like to ask you to tell me the

coordinates of your love - you know mine are (0,0) so that a transformation through the least distance may make the two coincident.

I have already tried, by then the derivative of your beauty and the ad infinitum integral of my love for you, the calculations that claim an accuracy of 1 in 6.023×10^{23} and confirmed that still there exists a gap of plus or minus infinity between the two.

I hope you will oblige me with a reply in most probable affirmative.

I'm yours,
Conjugate Diameter
LAMDA

— — — — —
?

R. T. NARAYANAN

On Monday we have Chemistry Practicals,
Two basic and two acid radicals;
Tuesday is the day of leisure,
When the Library eases the pressure,
On Wednesday we dig into drawing deep,
And before long we are half asleep.
Thursday's practical calls for "cooks"
But let them beware the masters looks.

Friday's lectures give us a long wait,
Each professor screwing us with some bait.
The tutorials of Saturday,
Put the students all at bay.
The workshop week stares us next
With absolutely no hope of any rest.

—————
* Prize contribution winning

TIT - BITS.

V. JOSHI.

- . A speaker went on and on and the audience dwindled until there was only one man left.

Addressing the only-man in front row, he congratulated him and said, "You at least are gentlemen".

"Not at all", came the reply, "I am the next speaker".

2. "You are charged with throwing your mother-in-law out of the window".
"I did it without knowing Sir".

"Yes but don't you see how dangerous it would have been for any one passing at the time?"

3. "What are you a writing?" says one mad man to another,

"A letter — a reply"

"But to whom?"

"To myself."

"What is the matter?"

"How can I tell you until I receive it?"

CAN YOU TELL?

P. C. Gupta.

"Where can a man buy a cap for his knee ?

A key for a lock of his hair ?

Can his eyes be called an Academy,

Because there are pupils these ?

What jewels are there to crown his head ?

Who crosses the bridge of his nose ?

Can he use, when repairing this bridge of his nose,

The nails at the ends of his toes ?

Can he ever fall on a slip of his tongue ?

Does he play on drums of his ears ?

And how does he sharpen his shoulder blades?

To answer all this would take years

Science without humanity

Worship without sacrifice

Pleasure without conscience

Politics without principle

Wealth without work.

INTELLIGENCE.....CONTENTMENT

Intelligence is what you get from home. Common sense you must develop yourself. Learning is what you get in school. Knowledge is what the world hands you. Judgement comes only with years. Experience is a bitter medicine administered by life itself and must be taken with a bit of conscience. Wisdom is a phantom often chased but seldom overtaken, Success or failure are matters of opinion. Reputation is the golden scale. Contentment is the final objective.

THE SEVEN SINS.

Knowledge without character

Business without morality

OUR FIRST ACADEMIC YEAR

D. Venkateswarlu, Ph. D.

On the eve of the First Institute Day on April 25, 1960, it is appropriate to recall and record some of the significant events of our first academic year.

Four of the German experts and a few other teachers joined the Institute in May 1959. At this time the Institute comprised of the C L R. I. Auditorium accommodating a handful of office staff and an adjoining room for Sri L. S. Chandrakant, Deputy Educational Advisor to the Government of India, deputed to the Institute as Special Officer for getting the Institute started.

Towards the end of May 1959, the academic staff shifted to the A C. College of Technology where space has been kindly allotted by Dr. G. S. Ladda, Director of the College, for the Institute class room, tutorial room, library, laboratory, workshop and staff rooms.

Early in June 1959, Dr. A. Lakshmanaswami Mudaliar, Chairman, Board of Governors of the Institute, came personally and checked in detail all the arrangements for starting the classes. The members of the staff had then the privilege of having tea with Dr. Mudaliar.

An important event in the organisation of the academic work is the first meeting of the Courses Committee on 9th June, 1959 with eminent engineers from outside and teachers of Institute as members. At this meeting, the sandwich system of training with academic and workshop weeks alternating was proposed, discussed at great length and adopted. The experts from outside wished our sandwich system all success as ours is the only Institution in India to have this system of training.

They said they would be looking forward to the results of our experiment in the 5 year integrated course as this again is the first Indian Institute to start the integrated engineering course. The framework adopted at this Courses Committee meeting enabled us to start the classes as scheduled and to cover the courses as planned.

This was soon followed by the meetings of the two Selection Committees for a week for the selection of students on an all India basis. At that time, Shri R. Natarajan, I.A.S. joined us as the Registrar.

During the month of June 1959, there has been activity regarding the organisation of the Departments, purchase of equipment, apparatus, glassware etc. and setting up of the two Hostels for the lodging and boarding facilities of the 120 students to be admitted.

Thanks to the cooperation of the office staff and suppliers of the city, it had been possible to start classes on 22nd July 1959 and Hostels two days earlier.

The Hostels were inaugurated on 29th July, 1959 by Shri L. S. Chandrakant. In his inaugural address, Shri Chandrakant stressed on the importance of hostel life in building up the character and personality of students and said that the compulsory residential aspect formed an integral part of education and training.

July 31, 1959 will always be remembered as a red letter day in the history of the inauguration of the Institute by Professor Humayun Kabir, Union Minister of Scientific Research and Cultural Affairs.

In the forenoon of the inauguration day, the staff of the Institute had the honour of meeting Professor Kabir at tea and hearing his views informally on a number of diverse topics – technical education, research, recent developments in industrially advanced countries etc.

The distinguished speakers at the Institute inauguration function were Shri Bishnuram Medhi, Governor of Madras, Dr. A. Lakshmanaswami Mudaliar, Shri C. Subramaniam, Minister of Finance and Education, Madras, and Herr von Heyden, West German Charge de Affairs in Delhi, the inaugural address being delivered by Professor Kabir. Extracts of the speeches are given elsewhere in this Magazine.

The month of August 1959, saw the departure of Shri Chandrakant to New Delhi to join back his post in the Ministry. At the send off parties organised, the staff and students expressed their esteem and admiration for Shri Chandrakant and their appreciation of his services as Special Officer for four significant months in the Institute.

The send off to Shri Chandrakant synchronised with the reception to Prof. B Sen Gupto who joined us as the first Director, with thirty years of experience at the Victoria Jubilee Technical Institute, Bombay. The staff and students have found in him a person who gives patient and sympathetic hearing and advice on all academic matters and extra curricular activities.

Towards the end of July 1959, the students elected their own representatives to

serve on mess, literary, cultural and sports committees. The names of the Secretaries and members of these committees are given elsewhere in the Magazine.

The secretaries organised the different activities, debates, quiz programmes, essay competitions, indoor and outdoor games, excursions etc. Many learned scholars have addressed the students. All these events are given in the Chronicle. The reports of the secretaries are given in the Magazine.

The Annual Sports Meet held on February 12, 1960 was a great success in view of the large number of participants in all events. The names of winners of contests in all fields are given in the Magazine.

Opportunities have been provided for the students to handle responsibilities in the management of mess, sports and literary and cultural activities. The students undertook the responsibilities creditably. This constitutes an excellent training in responsible conduct and community service. It is hoped that in the coming year the students will take up more responsible organisational works.

Another event of significance is the recent visit of Professor Sen Gupto to the Federal Republic of Germany in connection with the future planning of the Institute.

April 25, 1960 will be another red letter day in the history of our Institute, as it is the first Institute Day at which Shri K. Kamaraj, Chief Minister, Madras will be the Chief Guest and Dr. A. Lakshmanaswami Mudaliar will preside.

LAUGH A WHILE

The absent minded professor drove up to the door of his garage, looked inside, blinked and then turned around and drove at break-neck speed to the police station.

"Seargent" he gasped "My car has been stolen".

"You seem to have had a serious accident":

"Yes", said the bandaged person "I tried to climb a tree in my motor car".

"What did you do that for".

"Just to oblige a lady who was driving another car. She wanted to use the road."

* * *

A well dressed woman got into a bus and handed the driver a 10 Rupee note. She said "I am sorry I have no change". The conductor replied "That is alright. In a minute you will have 990 naye paise".

* * *

A specialist is a man who knows a lot about a very little and keeps on learning more and more about less and less until he finally knows all about nothing.

* * *

Professor Albert Einstein gave an interviewer what he considered the best formula for success in life. "If a is success in life, I should say the formula is $a = x + y + z$, x being work and y being play." "And what is z" inquired the interviewer. "That" he answered "is keeping your mouth shut".

* * *

When a boy is eight he wants to be a circus clown. When he is twelve, he wants to be his dad. When he is fifteen, he wants to be an engineer. When twenty one, he wants to be rich. When he is forty, he wants to do something noble. When he is sixty, he wants an old age pension.

* * *

Father "Well, son, how are your marks at the Institute".

Son: "Under water"

Father: "What do you mean, under water?"

Son; "They're all below 'C' level".

* * *

A student wrote in a December Examination paper "God only knows the answer to the question. Happy New Year".

The teacher returned the paper with the remark "God gets an A; you get an F. Happy New Year".

A stranger mistook a lunatic asylum for a college. Realising his mistake he said to the guard: "I suppose, after all, there isn't much difference between them".

“O yes, there is” replied the guard. “In this place you have got to show improvement before you can get out”.

* * *

Patient: “What are the chances of my recovering, Doctor”

Doctor: “One hundred percent. Medical records show that nine out of every ten die of the disease you have. Yours is the tenth case I have taken. Others all died. Statistics are statistics. You are bound to get well”.

* * *

A builder who was speaking in public for the first time said “I was unaccustomed to public speaking. My proper place is on the scaffold.”

* * *

Druggist: If you will give this new tonic a trial, I am sure you will never use any other.

Customer: Excuse me, I prefer something less fatal

* * *

If a man runs after money, he is money mad: if he keeps it he is capitalist; if he spends it, he is playboy; if he does not get it, he is never-do-well; if he does not try to get it, he lacks ambition; and if he accumulates it after a lifetime of hard work, people call him a fool who never got anything out of life.

—*Extracts.*

DEFINITIONS IN LIGHTER VEIN

Advice — Counsel old men give young men when they can no longer set them a bad example.

Bachelor — A permanent public temptation (Oscar Wilde)

College — Museum of preserved brains.

Discipline — Something which can be learned during the first year at school or the first year of married life.

Economist — Anybody who has a plan to do something with somebody else's money,

Friends — Persons who stick together until debt do them part.

Genius — One percent inspiration and ninety nine percent perspiration.
(Thomas A. Edison)

Happiness — Way station between too little and too much (Pollock)

Idealist — One who helps the other fellow to be prosperous (Henry Ford)

Jury — A group of people of average ignorance (Spencer)

Knowledge — The only instrument of production that is not subject to diminishing returns

Lawyer — A learned gentleman who rescues your property from your enemies and keeps it himself.

Modern age — Times in which it is impossible to be both honest and successful.

Morality — The attitude we adopt toward people we personally dislike. (Oscar Wilde).

Necessity — Almost any luxury you see in the home of a neighbour.

Orator — One who misses many fine opportunities of keeping quiet.

Politician — Man who is surprisingly well up on all the big questions of the day if you refrain from embarrassing him for the answer.

Relativity — Movie star Rs. 100,000, College Professor Rs. 3000, School Teacher Rs. 500.

Statesman — Man who can solve grave problems that would not exist if there were no statesmen.

Truth — A commodity so precious that we should economise in its use (Mark Twain).

Vision — What people think you have when you guess correctly.

Wise man — One who thinks all he says.

Extracts D. V.

Winners of events at the Annual Athletic Meet held on February 21, 1960

100 Metres:	1. J. Dominic	12.7 secs.
	2. L. K. Sharma	
	3. P. Chandrasekar	
400 Metres:	1. J. Dominic	64.6 secs.
	2. N. Sundaram	Best Heats
	3. P. G. Manusmare	Time: 61.4 secs.
High Jump:	1. J. Dominic	4' — 10"
	2. S. Veeraraghavan	
	3. G. Harinatayanan	
Long Jump:	1. J. Dominic	19' — 2½"
	2. P. Prabhu	
	3. Harinatayanan	
Javelin Throw:	1. J. Dominic	125' — 5"
	2. Thanhnuna.	
	3. S. Randhava	
Shot Put:	1. Thanhnuna	29' — 7½"
	2. S. Randhava	
	3. S. Talukdar	
Cricket Ball Throw:	1. H. K. Subramanya Rao	238' — 5"
	2. J. Dominic	
	3. Thanhnuna	
Slow Cycling:	1. I. R. Bajaj	
	2. S. Talukdar	
	3. D. S. Sihota	

4 × 100 Metres Relay : 1. { J. Dominic 57 8 secs.
Shanmugavadivelu
P. G Manusumare
N. Sundaram

2. { S. Veeraragavan
R. Ganesh
P. Chandrasekar
L. K. Sharma

Childrens' Race : Mohamada
Shazad
T. Ravi
B. Venkat Rao

Staff Race : 1. R. V. Narayanan
2. Dr. W. Scheer
Dr. W. Koch. Special Prize
A. V. Rajagopalan. Consolation Prize

Class IV and Hostel Staff Race : 1. R. Vasudevan
2. N. Mani

Ladies' Musical Chair : 1. Shrimati Kamala Raman
2. Shrimati Parvatham
Kumari K. S. Savithri, Consolation Prize

Students : Winners : Saidapet Hostel :

Tug of War : A. K. Mehrotra
R. C. Sinha
C. Chowda
K. L. Asanare
K. Nayak
B. S. Balga
M. Sampigethaya
L. D. Mudholkar
L. K. Sharma
A. C. Ragunam
R. Muthurajan
P. S. Chaunkar

Staff Vs Students : Winners : Staff :

Shri. R. Natarajan (Captain)

Dr. S. C. Das

„ W. Koch

„ W. Scheer

„ D. Venkateswarlu

„ B. V. Ramanamurthy

Shri. P. S. Srinivasan

„ M. D. Khadkikar

„ Ramgopal Sharma

„ M. Seetharaman

„ B. Nagaraja Rao

„ Prabhakaran

RESULTS OF TOURNAMENTS

<i>Tournament</i>	<i>Members of the winning team</i>	<i>Tournament</i>	<i>Members of the winning team</i>
Cricket :	R. T. Narayanan (Captain) S. Nageswar P. Chandrasekhar S. Veeraraghan R. Ganesh A. K. Mehrotra K. K. Dutt R. Devanathan B. Gopalakrishnan B. S. Sudhir Chandra B. Lakshminarayanan	Shuttle Cock, singles :	B. K. Wadehra S. Talukdar
		Table Tennis Singles :	S. Nageshwar Runners up P. Chandrasekhar
		Table Tennis, Doubles :	S. Nageswar V. Koteswaran Runners up : J. Domini S. Talukar
Hockey :	M. K. Muju (Captain) R. Ganesh V. S. Srivastava S. Veeraraghavan A. K. Mehrotra B. S. Sudhirchandra S. Nageswar C. L. Chowda A. C. Regburam L. K. Sharma R. Natarajhan	Tennis Singles:	S. Talukdar Runners up : S. Gourinathan
		Chess :	S. Sen Runners up : V. Nandakumar Rao
		Carroms:	G. Das Runners up : J. Dominic
Volley Ball :	J. Dominic R. C. Pahouja C. M. Dass G. C. Dass S. Randhava D. Negi	Ring Tennis Singles :	S. Dowbles
		Literary Activities :	
		Debating Competition :	1. S. Talukdar 2. N. Sundaram
Kabaddi :	S. S. Chandak (Captain) L. D. Madholkar K. Asnare S. K. Saboo P. S. Chaunker R. C. Sinha V. S. Srivastava	Essay Competition :	1. R. Venkateswaran 2. S. Srinivasan
		Recitation Competition :	1. R. Venkateswaran 2. S. Nageshwar
		Quiz :	1. R. Venkateswaran 2. S. Randhava

SPORTS REPORT

We had to commence this inaugural year of the Indian Institute of Technology without the service of a Physical Director. This imposed several handicaps in the organisation of sports and games activities. These were overcome to a certain extent by the appointment, at the beginning of the year, of captains for organising various games in the hostels. This idea worked well and throughout the year games were organised by the captains very satisfactorily.

In the second term it was decided to hold our Athletic Meet. A Sports Committee with Sri P. S. Srinivasan as the organiser was set up for the purpose. We were able to obtain the Teachers' Training College Grounds and also secured the services of the Officials from the Teachers' Training College, YMCA College and other Colleges.

The Meet was held on 21—2—60 with heats on the afternoon of 20—2—60 and forenoon of 21—2—60. Keen enthusiasm was evinced by a large number of students and the Meet was a general success. Prof. B. Sen Gupto, Director of the Institute took the salute at the march

past of the competitors. Jacob Dominic emerged on the Champion Athletic of the Meet.

I take this opportunity to express our thanks to the Teachers Training College for the facilities they extended, to all the officials especially Mr. Ramachandran of Isha Besant School for his untiring efforts and help and to Dr. Venka'eswarlu, Mr. S. Padmanaban and Mr. P. S. Srinivasan of our Staff for their services in making the Meet a success. I also thank M/S. Uberoi & Co. for their kind gesture in donating a champion cup for the Athletic meet. Tournaments were held in various games though the absence of our own grounds was keenly felt. These games brought to light the talent available amongst us around while the future teams are sure to be built up. The list of winners in various events is published elsewhere in this issue.

Considered as a whole we have had a very satisfactory year of activities. We are indebted for all the facilities extended by the authorities and I express, on behalf of the students, our thanks for the same.

S. RANDHAWA,
Secy. Sports Committee.

ECONOMY OF VIA-MEDIA (MIXED ECONOMY) AN ADVOCACY

A. V. RAJAGOPALAN, M. A.

At the prevailing economic and political conditions, it is obvious that it is not possible for countries to follow either the 'Laissez faire' capitalism or the 'classless society' of communism.

In the world of today, uncontrolled capitalism is an unrealistic proposition, so too, a completely state-controlled communist economy cannot have long-run stability. Even the staunch exponents of the respective economic philosophies, are today forced to be flexible and adopt a certain amount of latitude.

The advent of political freedom to most of the under-developed countries has warranted the origination and application of 'mixed economic policy' which can be defined as an economic policy which lends ample scope for operation of both the private and public sector. This mixed economy is an off-spring, of capitalism and communism. The peculiar feature of this

is that it tries to keep intact the merits of a capitalist economy, the praiseworthy ends of a socialist society. This pattern of economic policy facilitates increased production and equitable distribution and promotion of heavy industries and public utility undertakings.

An example of a country that is following the mixed economy pattern, is India. The Industrial Policy Resolution of 1956, clearly brings out the idea of co-operation of the private and public sector as imperative for quick economic advancement of the country.

For India, no other socio economic policy seems to be saner or more rational than present one of 'live and let live.'

The application of the co-existence principle of private and public sector in the economic sphere would yield good returns, in the shape of expeditious economic progress 'pari passu' with social justice.