

St. Joseph's college

Magazine.

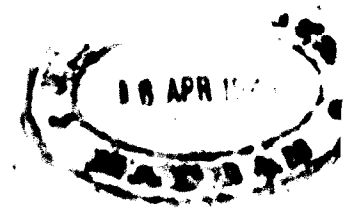
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MAGAZINE

OF

ST. JOSEPH'S COLLEGE, TRICHINOPOLY

VOL. XII

MARCH

No. 1

Notes

WITH the termination of the Centenary Celebrations, Superiors seem to have felt that Fr. Leguen had accomplished his task. None but a calm, cool pilot like him could have safely steered the College through the rather hectic days of the celebrations and the period of preparation previous to them. He has now been called to shoulder a far heavier burden. He is now, as many of our readers are aware, the Rector of Sacred Heart College, Shembaganur, where his undoubted talents are devoted to the moulding of generous young men who have consecrated their lives to the exclusive service of God and their fellow-men. We offer our most heartfelt thanks to our Centenary Rector for all that he did for St. Joseph's during his all-too short tenure of office.

Fr. Leguen's mantle has fallen on Fr. Pinto, essentially a St. Joseph's man. Once a lecturer, spiritual Father, editor, and stage-manager, he is now on the top rung of the ladder and none who knows him is surprised at the eminence he has attained. Rector regit, they say, we have already come to know that Fr. Pinto **can** rule and we feel assured that in his firm and steady hands the destinies of St. Joseph's are quite safe!

2. A recent journal speaks of what the Editor of the College Magazine had come to think of definitely as a thing of the very dead past, Cacoethes, Scribendi-Cacoethes

NOTES

scribendi, indeed! The Editor has, all these days, been wondering what could have come over our young men that they should fight so shy of appearing in print. There used to be an old Latin coward who advised: "Ad proelum tamquam ad praelium" (To the press as to a fight) but our anti-Classics educationists have effectively consigned him to a bourne from which there seems to be no hope of return. So the Roman Whiteliver cannot account for the timidity of our lads. Is it, then, that, owing to their labours for their own hostel magazines, their inspiration has been sucked dry? Possibly! The Editor fondly hopes that his next call for contributions, will meet with a heartier and chiefly a more abundant response. Meantime, he wishes to thank very heartily indeed the contributors to the present issue for having helped him to give it a really presentable appearance.

3. The Centenary was not all sound and song signifying nothing. Tangible results have followed and one among them is a number of Scholarships that the generosity of our Old Boys and friends has made possible. Pride of place must be given to the Virapandianpattanam Varthaga Sangam which donated the handsome amount of about Rs. 2500. The interest from the sum will go to help a poor deserving student of the Bharatha community prosecuting his collegiate studies. In addition Rs. 27,500 more have been set apart to provide scholarships. These scholarships have been named after the following:—*For College Students*, 1. Loyola. 2. Kerala. 3. Pudukottah. 4. Mahamahopadyaya T. V. Sreenivasachariar. 5. S. Arputhaswami Udayar. 6. Rev. Fr. Barbier. 7. Antony Isar. 8. Rev. Fr. Santiago. 9. Rev. Fr. Lacombe. *For High School Students*, 1. Raja of Chettinad. 2. Dr. Alagappa Chettiar. 3. Rev. Fr. Arulnathar. 4. Savarinathan. 5. A. S. G. Lourduaswami Pillai.

Fr. Principal will be able, he expects, to set apart Rs. 20,000 more to serve as foundation for eight more scholarships to be awarded from the beginning of the next academic year.

Deus ex Machina (A short story)

by R. Swaminathan

THE taxi glided smoothly past Hotel Imperial. Inside I was feeling snug and self-complacent. There was something immensely re-assuring about the whole atmosphere. The taxi, the tram, the hotel and a hundred other appurtenances of comfort infused a self-confidence in you. Gee! what would I have been if I had been born in the 18th or 19th century! The 20th century was the last word in luxury and comfort. Only you had to have a lot of money. But then a clever fellow like me can easily make pots of money. Here again the 20th century came to your help. What fine openings it afforded you—cinema, commerce, journalism, what not. The 20th century was better—a deal better—than either the 18th or 19th century.

But oh these women! They wouldn't move with the times. They were stagnant, relics of the past. My wife was a concrete instance in point. Modern ideas were new-fangled notions to her. She preferred the 'good old'. Good old indeed! Lucky for the blighter who had invented that term that he was not before me. As if anything could be good and old. Hopelessly recalcitrant, that was what the wife was. Bah! there couldn't be a greater blight on a man's life than a wife.

The taxi stopped with a jerk before the office. A crisp note changed hands and I strode into my room. An official envelope greeted me. I ripped it open. I had been transferred. I was in a jam. It was a tiresome business making the wife shift from one place to another. It would take at least a month. But hang'd if I was going to stand the wife's shilly-shally this time. I would give her a piece of my mind and if I guessed right she would remember that piece for some time. Dash it! you had to knit your dear old brows at times and play the man. Otherwise the wife would become...er...unruly.

That evening when I returned home I was the very picture of sternness and resolution. My glasses were dangerously perched on the tip of my nose—a sure sign that I was out of sorts. The wife came with a smile and a cup of coffee. That smile was the rock on which many a project of mine had been wrecked. At the sight of her some of my resolution left me. I was in a very unenviable position; I had to face the wife and at the same time stop my resolution leaving me.

DEUS EX MACHINA

"Cut it out, old girl! It won't do. Quite!" I rasped.

Her smile deepened. "Well whatever . . ." she began

"Sh-h-h-h!" I interrupted her "am I master here or am I not?"

"I suppose you are".

"You needn't suppose, mistress. Take it from me I am, or, at any rate, I'm going to be."

"What of that?"

"Am I the wage-earner of the family or am I not?" I again burst.

"You are" she hissed.

"Am I going to have my own way or am I not?"

"But what's the matter?" she asked irritated.

"The fact of the matter is that I've been transferred."

"But why should that make you rave like a . . ."

"Another equally important fact of the matter is we are leaving Madras in a few days."

"In a few days! How is that possible?"

"Why not?"

"It's a strange place we are going to. We can't live in the streets. We must make proper arrangements for our lodging and it can't be done in a few days."

"Oh dear! dear!" I cried wearily "what's all the nonsense you talk about previous arrangements! Any place is as strange or as familiar as any other place. Modern science has annihilated time and distance, don't you know? You live in 1945! What d'you think are trains for? What d'you think are hotels for? What d'you think are"

"OH! do stop," she snapped. "If you want to leave Madras in a few days, you can. I've no objection. But don't come to me when you land yourself in the soup."

"By God! that was a good'un. But believe me, sweetie! I shall not have to come to a mere girl for help."

DEUS EX MACHINA

That settled it. I was employed for the next few days in packing our things while the wife kept sulking a good deal. Her oval face took a more elongated shape; her sensuous lips were pursed, a look of ineffable scorn and contempt crept into her eyes. It was enough to make a man sick; but I ground my teeth and did the whole packing unaided.

So, some days after, one fine morning we strode into the railway station. Inwardly I was feeling all knocked up. My overcharged nerves had broken down. But I tried to cover it up with a nervous swagger. The wife was one living protest. There was protest in her eyes, in her gait, in her every limb. People shot queer glances at us which made even my black shoes turn a little scarlet at the toes. My eyes implored my wife to take pity on me; but just at that moment she was very much interested in a six-fingered hawker who was droning like a wailing cat. At last we took refuge in a second class compartment. We were at least safe from the eyes of lookers-on. The wife sat with a sigh and began to stare very hard outside the compartment.

The train started with a groan. Her taciturnity was getting on my nerves. Her silence seemed accusing. I coughed and fidgeted, but she deliberately averted her eyes from me. I was desperate.

"Er—travelling in war-time is a bit hard, eh?" I hazarded.

"Not at all. In 1935 there was no war but travelling then was harder than it is now, for the world was not as advanced then as it is now."

"Do you think so?"

"Yes. Don't you?"

"Well, it didn't strike me that way."

"How funny! I learnt it only from you. According to you comfort increases with the passage of years."

I dropped the conversation; silence was better. Nor did my wife seem particularly anxious to revive it. There was no limit to a woman's 'relentlessness'. The whole journey was one long agony silently endured before an exacting goddess.

By the time the train reached our destination, I was reduced to a mere fidgety mass. I blinked unintelligently. The whole place swam

DEUS EX MACHINA

before my eyes. A confused jumble of noises reached my ears. What did I want? Oh yes, I wanted a porter. But where was one? Good Lord! was there no porter there? What was that I saw before me? Why were all the people rushing to a particular place?

I felt a hand on my shoulder. "Waiting for anybody?" a pleasant voice queried. I gathered my wits about me. A smiling young man was standing before me. Somehow it was heartening.

"Er—nobody in particular," I mumbled. "I say would you mind getting me a taxi? I'm a stranger to this place," I volunteered by way of explanation.

"Not at all. Just wait; I'll be back in a jiffy" he said and elbowed his way through the crowd.

I felt immeasurably relieved. My heart was warm with gratitude to this DEUS EX MACHINA. A few minutes after, he returned with taxi and porter. Our things were carried to the taxi and my wife was comfortably settled in a snug corner. I was about to thank the obliging stranger, when, to my surprise, he got in beside the chauffeur. "Please ask the chauffeur to drive to a good hotel" I requested the stranger.

"Don't worry. I know just the right place for you" he replied.

I was willing to be managed.

After about 5 minutes' drive the taxi stopped at the portico of a nice little bungalow. The stranger leaped out of the taxi and running to the door-way pressed the bell. There was a muffled ringing of the bell inside. A servant appeared and was curtly ordered to carry in the luggage. In the meantime we had got out of the taxi. Oh hell! here was another pretty situation! I had been hoping to walk into a hotel or an inn and here I was before God knew whose house. I had no initiative left and the wife was anything but helpful. The stranger however was all smiles; he had an encouraging air of quiet aplomb about him. He conducted us into the house. "It's my own house" he volunteered to ease our minds, "you can make yourselves quite at home. There's a friend of mine whose house is to let. I shall arrange to fix that up for you. It's quite a nice one."

I had never felt so grateful before. He came to my rescue at a time when nothing but a miracle could have helped me. To be sure, he was a real gentleman. He understood you perfectly; there was nothing

DEUS EX MACHINA

jarring or discordant in his hospitality. He did just the right thing at the right time. He was mainly responsible for the truce between me and my wife.

It took sometime for me to relapse into my normal self. The recent nerve-racking experience was more than momentary in its effects. Indeed I never completely recaptured the confidence and unruffled placidity which had characterised me. I grew a little cautious. My off-hand careless banter left me. I had grown wiser, as my wife pithily put it.

One evening after a tiresome day at the office I was relaxing over a cup of tea. The obliging stranger who had become our intimate friend walked in. Naturally, I was glad to see him. My wife smiled her welcome and brought another cup of tea and some eatables. We fell to a lively conversation. Suddenly he posed the most unexpected question in the world.

"What is your opinion about Life Insurance?"

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I was staggered. I knew little enough about Insurance, much less about Life Insurance. But I did not want to display my ignorance before my wife, for I was painfully endeavouring to regain my ascendancy over her. Was he an insurance agent, I wondered. No; he seemed too artless to be one. My mind twined round the problem, but I could not evade the question. So I mumbled something about the beneficent part Life Insurance played in society, and how without it many families would be hard hit.

He smacked his lips and put down the cup. His face was wreathed in smiles. "Even at the first sight I know, you were a sensible man" he said. I felt gratified. That praise meant much to me. I shot a glance of ill-concealed triumph at my wife. There was a heightened colour in her cheeks. After all I was a half of her—may be the worse half but still a half.

"People don't realize the value of an Insurance Co.," he continued "its services are manifold. It relieves you of a great burden—the anxiety about the unknown future. Supposing you die now, where's your wife? But you take a policy in an Insurance Co., and die, well there she is. I mean she is provided for. A stable Insurance Co., is a boon to mankind. The Mars Insurance Co., which I represent is about the stablest of all. You will take a policy, of course. I need not press you. You are a prudent man and fond of your wife I know." He stood bending over me like a guardian-angel. His face beamed into mine.

DEUS EX MACHINA

I blinked. I was dazed at the swift torrent of words. The significance of that peroration slowly dawned on me. I had a mounting feeling that I did not like him. No, I loathed him. Fancy his talking to ME about the welfare of MY wife as if she were HIS OWN. What the deuce did it matter to him what happened to my wife after my death? Did the blighter think he was a Saviour or something? So that was the secret of his obligingness! And I thought he was artless! I was a fool to have fallen into his trap. But now I was right in the centre of the soup. I had to give in for—well it would seem churlish if, after all he had done me, I didn't take a "policy", as he called it. His policy certainly worked well.

"So if any obliging stranger comes and solicitously inquires after the welfare of your toothless granny, your Pussy and your Jimmy, you must take the wind", I soliloquised after shelling out the money.

"R's TRIUMPH"

I was banned from Mod'n Oxf'd at the time of Wate'loo,
And it soon became the fashion to pronounce me "doubleyou."
This lingered through the century, as a mark of high degree,
And then petered out in laughter circa nineteen hundred three.
In my struggle for existence, I had found a pirate niche,
Whence I waged war on hiatus in the Cockney form of speech.
But the spread of elocution and the "Loranorder" sneer
Looked like ousting me from this retreat as hateful to the ear.
Then lo, from High Olympus and through voices rich and bland,
The intrusive "R" was broadcast in all quarters of the land.
"Through RussiaR into PrussiaR, our guerillaR armies throng."
(And I reach apotheosis in the "AreaR of Caen.")

D. T.

In the Land of Mod

by S. Srinivasan

THE LAST signals given, aloft we rose. It was a Liberator that we flew; it carried a good load of bombs in its bosom. I was the tail gunner. How fascinating!

When you sit at the end of a huge bomber, moving at the rate of 350 m.p.h., you are thrilled: it is too mild a word you have for all the sensations of being suspended in the air. You feel desolate. Often, you are tempted to watch the scenery below or a new bomb burst. But, it is not your business. Keep a keen lookout, and take a good crack at any hostile wings you come across.

The landscape of England was fading slowly, and we were already over the Channel. The captain warned repeatedly "lights down" through the "inter-com". In a few minutes, we were over France. We were all flying in tight formation. A solitary battery, situated east of Bologne let go at us, but missed. As we neared the German border, the onslaught increased. Once, a Mc. 109 came up unnoticed. It was about to dive. I saw it and hailed it with a spray of lead, it plunged down emitting flame and smoke from a star-board engine.

Target nearing! We were to hit a gas-works in South Berlin. In the gathering dusk, we circled in search of the target at 5,000 feet. There it was, a long row of narrow zinc-roofed houses. Several of the searchlights had been switched on. But there were clouds, and we were not noticed.

In tight formation, we swooped down, and released our load, and rose again from

another direction. All the while, I waited for the yellow-nosed Mc. 109s and Junkers, which came up soon. Soon the air was full of fighters and bombers, roaring of guns, and parachutes. The attack was terrific. Many direct hits were scored on the target. Berlin looked like the mouth of hell. I had 3 jerries for my "bag".

Our mission fulfilled, we turned and fled. Suddenly, the air-craft shook violently as if a thunderbolt had crashed on it. We knew we had been hit. A port engine was badly damaged and ceased to work. Oil began to drip from the fuselage. But, bless the sturdy constructive skill of the British mechanic! We still carried on; but were losing height and speed slowly, "crippled but not killed".

The aircraft made a 'pancake' landing in a meadow in East Anglia. I scrambled out, and peeped at the pilot's cockpit. What I saw there made my hair stand erect. All but myself were absent! Dumb-founded I entered the plane again, and checked my inter-communication wire. It was cut.

How could this have happened? I told you we were rocked violently when we were hit. In consequence of this, my communication wire became disconnected, and nobody noticed it. While we were over East Anglia, the situation became worse, and the captain gave orders to abandon the aircraft and bale out. But I did not receive the orders owing to the break in the communication wire. So everybody except myself baled out. Soon the plane made a safe landing by itself. Thinking thus I took my map, and found

that I was 4 miles near the village, Avenue. I made towards it.

In the mid-night gloom, I saw a bright lamp shedding its light through the window of a house. I went towards it, and saw a board hanging in front of it with "Hotel for R. A. F. Units". Steeped in elysian reverie, I walked in to take an exhilarating drink. What I beheld there—think what you like—made me faint with joy and wonder. What did I see?

I saw my companions swallowing cups of hot punch! They also were greatly astonished at my unexpected arrival. The captain exclaimed "Hullo! What the—"

And then—I felt my shoulder violently jerked, and heard a voice, "Room-mate! Warden!"

I woke up, and snatched a book from my shelf and opened it hastily.

From Debris

by Chinna Pillay

EN fête! That was it. The little Italian town of Todi was en fête. It was bustling, brimming with exuberant enthusiasm. The weakness of the Italian for grandeur and display was everywhere apparent. It was carnival time—and carnival meant everything to those simple people.

Multi-coloured banners floated lazily in the gentle breeze. Festoon, flower and flag combined to produce a riot of colour. Gaily decorated houses, artistically adorned façades, gracefully attired women and children, everything contributed to enhance the beauty of the lovely town.

Children—they were plotting to drown the blare of bugles, the flourish of trumpets; grown-ups—they would not brook defeat at the hands of shrill-voiced youngsters. Verily, it was a Babel.

People began to crowd on the balconies and temporary stands. Every vantage-ground that could command a view both of the road and the parade that was to be the high light of the celebrations was

overcrowded, bearing thereby testimony to the people's eagerness accentuated by the approach of the grand finale. Even as happiness, enthusiasm was contagious and productive of boisterous noise.

Then it came—tragedy, destroying mirth! There was a crash, a shriek, a collapse, a silence! Frantically people ran to the scene of disaster. One of the roughly-made balconies had toppled, hurling its occupants into the piazza below. The cry of anxiety and agony rent the air, the swarming and seething populace echoed it. And confusion prevailed.

There were several casualties. A young woman in the full bloom of youth, grace and beauty was one of the victims. She was fatally crushed.

"Beloved!" It was all Jacopone could utter. Frantic and panting, he knelt by her side. Stunned by the sight, paralysed at her plight, he put his arms around her protectingly. And again he whispered into her ear the only word he could bring out "Beloved!"

She was speechless; only the mute agony in her eyes betrayed the poignancy of her suffering. Yet she resisted with what strength was left her the attempt of her husband at ascertaining the extent of her injuries.

In the sanctuary of home, he undid the first button of her beautiful silk blouse. And then.....a tremor passed through his frame rocking and writhing it in an orgasm of agony. He collapsed in a heap on to the floor. Inside the fashionable outer garment was a coarse hairshirt! He knew what it was worn for; in a flash his miserable self, his wretched life, stood before him. Arrogance aggravated by growing influence and consequent affluence had rendered the observance of religion a nuisance to him. His life was wicked. And his wife was repairing, suffering for him....

The suddenness of the catastrophe that had stalked into his carefree life, the revelation of the hair-shirt worn to repair his evil deeds and, most unbearable, the realization that his beloved, his beautiful wife, was fast soaring into the Great Beyond, and that so early in life, tossed him into a paroxysm of affliction. There, by her sofa, in presence of death, the great Jacopone wept convulsively. Anything, everything he would willingly barter if only he could bring her back to life, if only he could snatch her away from the clutches of death.

He sought her eyes, his own dilating with fear and desolation. A slight movement of her arm diverted his attention. He snatched it with passionate fondness; and she gave him in return a look of ineffable tenderness.

"With you, thanks to you, my Queen, I will rise!" Jacopone raised the unresisting hand to his lips. To the pair it

signified an act of reparation, a resolve to amend. It brought them happiness, born of peace.....

The man who got up was a widower. Frivolity, laxity and perfidy would find place in him never more. He knew that his life would be one of suffering, of suffering in silence and loneliness. The process of realization had involved a life—dearer than his own! Jacopone would never fail her again!

Worldly possessions no more mattered to him. Dignity and popularity were empty sounds, power only a nightmare! He left home, Todi, even Italy, and wandered from place to place as a mendicant-pilgrim; scoffs, privation, cold—nothing was too much for him. Though he knew that to suffer was nothing to the bitterness of suffering alone, he was happy only because he realized that thereby he was making up for all her suffering.

The news created quite a sensation. Coming as it did in the wake of the past, there was no need to be surprised at it. Yet Todi was full of the news. It spread like wild fire. Jacopone de Beneditti had entered religion! Todi's greatest lawyer, richest citizen, fervent patriot and most brilliant poet had embraced the religious life.

In the monastery he gave himself up to meditation and reparation. Every day, every hour, every minute almost, when thoughts of his wicked living and of his wife's hair-shirt smote him with remorse, the memory of the smile of encouragement, of tenderness, that she had given him revived in his breast and helped him on, on, in his ascent of the mountain of God.

We can still hear, at least on the 15th of September, his most brilliant hymn wherever a Catholic Church is to be found,

THE CARICATURE

Set to soul-stirring music by renowned composers, Jacopone's majestic masterpiece, "The Stabat Mater" still evokes noble sentiments within the hearts of millions all over the world. The expression of Jacopone's participation in the Passion, the "Stabat Mater," will have its unique appeal as long as man remains man.

The Caricature (A short story)

by K. Santhanam,

"WILL YOU stop talking there, Jembu?" demanded the Lecturer. The whisper ceased. The lecturer proceeded, but only for a short time.

"Look here, Jembu, if you have anything to say to your friend, go out of the class and then carry on. Your friend will accompany you."

Jembu and Srinivasan stood up as mute as statues. "Don't waste my time here; both of you will quit the class at once," ordered the Lecturer. The two collected their books and walked out in grim silence.

The censure was too much for Jembu. He could not see that he was in the wrong. Ideas of revenge filled his mind. However, he saw no other way of giving vent to his feelings except by drawing caricatures of his lecturer much to his own amusement. The one that most delighted Jembu was his professor's pose, standing on the platform with legs wide apart, his hands thrust into his coat pockets and the tie projecting in the shape of a bow. He dashed off his signature underneath that picture and placed it on his table to be always in view.

Just then two hands pressed Jembu's eyes tightly from behind.

"Who is that? Padmanaban?" asked Jembu trying to release himself.

"No" said a familiar voice.

"Oh is that you old fellow?" Srinivasan chuckled and began to look at Jembu's books with one eye on the picture. Jembu went in to bring a cup of coffee. When he returned he was taken aback to find both Srinivasan and picture gone. Leaving the coffee on the table he hastened to Srinivasan's house.

"Where is the picture?" thundered Jembu, catching Srini by his arm.

"Picture! what do you mean?" Srini looked all innocence.

"The one you carried off from my table."

"Oh that one! the caricature of our English Lecturer?" replied Srini coolly—"You have drawn it very cleverly. I think it must be lying in the school letter-box now."

Jembu was startled. His lips quivered with anger. He was at a loss to know what to do.

"I thought....." began Srini by way of explanation.

ON EARLY RISING

"Nonsense!" blurted out Jembu. He ran to the college, and then ransacked the contents of the letter-box. But to his utter dismay he could not find the object of his search. On enquiry he learnt that the lecturer had just then taken away his letters.

Jembu reeled. Fear succeeded anger. He knew the principal would not tolerate such a thing. The college notice-board became a regular dread to Jembu. He had not the courage to salute his professor or the principal when he met him. In the class he preferred the corner seat to escape notice.

The next Monday, a peon came into the English class and handed a note to the lecturer.

"Jembu, No. 468, wanted at the office immediately by the principal."

Jembu's pulse beat fast. He felt Doomsday had at last come. Oh that smile on the lecturer's lips! Jembu atonce understood that the complaint had gone up to the Principal. Even this slight hope of escape was shattered.

Jembu stepped into the Principal's room. "Come in, Jembu," said the principal with an encouraging smile. "Which do you prefer?—books or money?" Jembu gasped.

The Principal thrust the College Magazine, wet from the press, into his quivering hands and opened the tenth page. There Jembu saw the caricature of his lecturer drawn by him and underneath it was written:

"Awarded first prize: Rupees Five!"

On Early Rising

Anon.

I MUST think that the real author of that hackneyed couplet which glorifies the principle of early rising was some peasant-poet. For early rising can never be supposed to make anybody healthy, wealthy and wise, except, perhaps, the farmer. In the village, he breathes, at dawn, cool fresh air, impregnated with health-giving ultra-violet rays. He has about him a cheering, buoyant Nature. He can work harder and more in the early hours of the morning, and if economists would grant that work is wealth, he should become wealthy. He grows in wisdom too. In the morning, perhaps, his head can retain a thought for a few minutes before it vaporizes along with his scanty brains as the sun heats them up.

But what a difference the principle makes with dwellers in the town, with civilized men in general. Lately I have been admitted into that group, and now I realise only too well the false philosophy and fallacious arguments in that pernicious couplet—

Early to bed and early to rise
Makes a man healthy, wealthy and wise.

This early rising to make us healthy! How could it for all the world? It can only make us ill. Those who had the misfortune to be disturbed out of their bed in the dawn of a December-day, must have realised it at a heavy cost. What dire reminders they must still be having in their throat and lungs? To breathe the dewy, chilling air of our dust-ridden towns to

ON EARLY RISING

make us healthy! God forbid! The government has been indeed wise to revert to the old time. If some fanatic reformer had gone forward with another hour, our towns would have started squeaking and coughing en bloc, and the linguists of Tamil would have been busy inventing nasals to make one another intelligible.

To rise early would make us wealthy! All evidence is the other way about. Mr. Reserve Bank and Mr. Imperial Bank are never astir and busy before 10 A. M. Every one of our twenty-stone, pot-bellied merchant princes gets himself busy with his eminent job of dusting the bales and the silver cups and the gold chains and the iron locks—a very humanitarian disposition in him to take upon himself the work which many hands in their homes must have been severally doing—never before 10 o'clock. On the other hand, those who are up and busy in the early hours of the morning are the scavengers and the sweepers, and Messrs. Black Coffee and Green Tea at the corners of the roads. And how wealthy they are!

It makes us wise! Who can mention half a dozen great men of the world who had been early risers? Our generation certainly points to the contrary. The Churchills and the Stalins and the Roosevelts of our time worked late into the night, and slept soundly through the best part of the morning, unless, of course, they were disturbed and warned by that sleepless messenger wailing over impending death and ruin.

Nor are we without the support of philosophers in our arguments against early rising. Descartes, it is said, once answering a young man who asked him how to become a great mathematician, laid down as the first principle. "Never rise from bed before nine in the morning." Though I cannot vouch for the truth of

this story, I can testify to the results it produced upon the student of mathematics. He followed the rule to the letter, and he was not recommended even for a pass. One day I tried to sympathise with him suggesting how fatally he was misguided. He turned round and said that I was wrong, and attributed his failure to the ignorance of the examiners who, with their limited powers of understanding, could not make head or tail of his rather original answers. I thought that there was something in what he said too, for, if Einstein were to present his paper to those examiners, he was sure to fare no better than my friend.

One of the most unfailing early risers is the Ass. We can see him at about four in the morning, standing wide awake with attentive ears, almost at every corner of the road steady and motionless as a Roman sentinel, looking over a wall or a gutter and down the deserted street. We can see in his eyes an utter absence of alertness, and the solemnity with which he contemplates the long expanse of the dingy street seems to be rather curious, stupid. He moves not; he winks not; but all the same it would be hard to say what he is so intently thinking about. We shall be charitable to him: he is mastering the Labour Question or planning an all-out strike to get a day off in the week. We could have nothing to complain against him if he continued his studies without a diversion. But behold suddenly and for no apparent reason whatsoever, he puts forward his chin, opens his mouth slightly and in a moment has awakened the whole town with his vociferous "He-haw! he-haw!! he-haw—w—w—w!!!"—his first salutation to the early risers. I am sure nobody, with any aesthetic sense, would think of starting his day with a greeting like this.

ON GRIEF

Our friend, the screeching owl, is another early riser. What could be more annoying to our finer senses than to subject our ears to her discordant howling of "Hu—hu—hu—gh"? Or the sharp dart of a hooting like "Hoogh" nearly a dozen times at regular intervals, as though she

Does to the moon complain
Of such as wandering near her secret
bower
Molest her ancient solitary reign?

Who but the most foolish or the love-lorn like her, would think of molesting her in her desperate solitude?

To those who believe in omens, nothing is more calamitous than to be badly caught by the Washerman & Co. From my experience if we be thus caught,—and

we cannot escape their procession in the morning—we are sure to add new wares to our wardrobe, but not without a pang to see that our purse is awfully shrunk. Nor should we like to be stopped and interrogated by the solicitous queries of the wandering mare and jut, when we want to go nowhere in particular. Annoying, likewise, is the maternal solicitude of the fruiteresses in the morning, when we cannot even bear the sight of a fruit; of the milkmaids offering their pale, cold vitamin-broth, when what we want is a steaming cup of black coffee; or to look at the closed door of the tobacconist, when, like Albert Edward Foreman, we badly need a cigarette. I will never hereafter get up in the morning lest I lose my health, wealth and wisdom, and, the joys of the day, no less.

On Grief

Capt. Eugene (O. B.)

1. Who wept no tears
On him is wasted all years.
Grief's abode is holy,
Its blossoms are glory.
2. Strange music floats from this lyre,
It raised the wisest monarch out of mire,
Riches and titles tarnish not its glory;
Before these it was, from times so hoary.
3. O ye angels, you know not how to weep;
This the mortals' gift; this vale of tears for you too deep!
Nearer are we to your God in heaven:
For He too wept—your God in heaven.

Mathematics

by A. Lourdasamy

LITTLE as I am interested in the stupendous results achieved by Engineering and the other applied sciences with the assistance of mathematics, I am not going to advocate Bacon's Utilitarian Philosophy; and I attach to mathematics an aim which is anything but practical. Apart from the consideration of pursuing mathematics as the means to acquire wealth, fame or honour to which the subject can be made to conduce, I confine myself to the 'enjoyment'—intellectual or moral—which I conceive it to impart to its ardent pursuers.

Mathematics is undoubtedly the most conservative of all the sciences as is apparent from the incontestability of its propositions. But this is not to say that it is not a progressive science. In fact, every branch of Mathematics is putting forth fresh blossoms everyday and every notion is extended with the extreme caution that such extension does not lead to contradictions with results which are well established. The most distinctive feature of mathematics is that unlike other sciences like botany, zoology and chemistry which are constantly and inevitably obliged to fall back upon the observations of the senses, it is able to pursue its course of development independently and unmindful of things outside of it, after certain premises have been established. The momentous facts and laws of this enormous field of learning are not discovered by telescopes, spectroscopes, electrometers and such other paraphernalia of modern science. They are wholly mental constructions and synthetic judge-

ments which the pure intellect perceives. It is this intellectual perception, as opposed to the sense observation, which dignifies the subject and gives it an air of enviable superiority over the other sciences. Within the limited space of this essay I cannot go into further details regarding the nature of the subject and hence I shall straightway fall in line with the subject 'What is the aim of pursuing mathematics?'

First and foremost, it must be said that mathematics gives much training to the brain of its pursuer. The subject, being logically presented, provides much scope to the student for developing the faculty of reasoning. I admit, rather I maintain, that mathematics does not afford scope for passionate intensity of feeling and bursts of splendid eloquence. But the mental training and intellectual excellence it imparts to its ardent pursuers cannot be denied. Nothing can be farther from the truth than the statement that arguments in mathematics are fallacious. Of course for those who cannot understand the subtle reasonings of mathematics, they will appear to be sheer sophistry. Great mathematicians consider it Symbolic Logic. Moreover, the development of Mathematics has profoundly influenced philosophy. I need but mention Pythagoras, Plato, Descartes, Spinoza, Leibnitz, Kant and Russell in order to call to mind philosophers whose systems were controlled largely by their views of mathematics.

- We cannot but acquiesce with William Hazlitt in his opinion that 'the utility of Mathematical truths chiefly consists in

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the contemplative pleasure they afford to the students' and that 'lines, points, squares and circles are not interesting in themselves; they become so by the power of mind exerted in comprehending their properties and relations'. The student who is interested in mathematics and who pursues it with earnest conviction and workman-like assiduity, is occupied seriously with the intricate problems of mathematics and his determination of purpose makes him a calm and quiet philosopher and an industrious scholar. This industry prevents him from vicious excesses and he acquires patience, the most coveted of all virtues. If he finds a problem very difficult to tackle, he will not set it aside. We can observe him sitting tight with the problem in front of him and immersed in deep contemplation. If he happens to tackle the problem after a considerably long time, the pleasure of mental satisfaction he attains will be so intense that words fail in the attempt to describe it.

I am of opinion that mathematics is a subject which is to be pursued for its own sake without a thought of how the intellectual discoveries can be turned to practical account. Mathematicians prove propositions by a series of subtle reasonings, assuming the fundamentals of mathematics. Never for a moment do they hesitate and question themselves

whether their earnest undertaking will be productive of any substantial profit. Poets occupy themselves seriously with airy nothings and creatures of pure fancy. Even so the mathematicians are interested with imaginary quantities. When they speak of points and lines at infinity they are concerned only with imaginary points and lines which we may as well call fictitious points and lines. They are artificial products of human thought and they lack the attributes of representability. Poets create an ideal region in which the various actions and events connected with the subject matter of the poem take place. But after the first suppositions have been made everything ought to be consistent. In a similar manner the mathematicians after making some premises prove theorems, the proof being quite logical.

Now that I must conclude, I assure my readers that mathematics, as I have tried to show, is a subject which is to be pursued rather with a view to attaining sobriety of conduct and intellectual pleasure than with the particular design of acquiring wealth, fame or honour. But for its peculiar characteristic of moulding the intellect of those who are in pursuit of the subject, and giving infinite scope for contemplative pleasure mathematics would not have been universally recognised as the "Queen of all sciences".

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An Outline of Relativity Physics

by T. R. Rajagopalan & R. Subramanian, V B. Sc. (Hons.)

Introduction

WHEN Alexander Pope was asked to write an epilogue on Sir Issac Newton, he suggested the following lines:

"Nature and Nature's laws, lay hid in night
God said: 'Let Newton be', and all was Light!"

Mr. J. C. Squire, seeing this, added rather mischievously:

"It did not last, the Devil howling 'ho'!
Let Einstein be, and returned the Status quo!"

These lines, though meant in a rather light vein, reflect, to some extent at least, the mental perturbation with which the world at large received the most revolutionary theory of the century from the mathematical genius—Dr. Albert Einstein. Indeed, this sense of consternation was not without foundation. If Einstein had confined the support of his innovations to mathematical demonstration, however cogent, he might not have attracted so much attention. But he did more. Looking out upon a Universe performing its perennial routine, as every body imagined, in strict conformity with Sir Issac's principles, Einstein said: "If at such and such a time, you will please to observe it closely, you will perceive that it is guilty of minute but definite irregularities, doing things it could not possibly have done, if Newton had been right."

The intelligent layman, however, is utterly unable to follow Einstein's reasoning, and sees nothing but chaos and confusion in his theory. There have been endless attempts to dish up the theory of Relativity

for popular consumption, to show how very reasonable it is, if you only choose to look at it in the right way. But the more the enthusiasts of the new theory tried to popularise it, the more grotesquely incredible did it appear. This article is a humble attempt on our part to bring out briefly, but as clearly as possible, what radical revisions have been made by Einstein in the classical ideas of space and time and how far these are justified on the experimental side.

Origin of the Theory

The problem of 'absolute motion' of bodies and the interpretation of the various experimentally observed facts in terms of 'absolute motion' have formed a burning question in Physics for more than a century. The recognition of the undulatory nature of the propagation of light was followed by the assumption that all space is filled uniformly by "ether" which is at rest. The heavenly bodies, including the earth itself, were assumed to move through ether without resistance. The question, extremely puzzling, though apparently simple, arises naturally: What is the "absolute velocity" of a body? In other words, what happens to the ether when physical bodies move in it?

A complete dragging of the ether by the moving matter with identical velocity was proposed by Hertz, but this theory had to be rejected, since, on the basis of this hypothesis, it was impossible to explain phenomena like the Doppler effect. Also, (Bradley) showed that if ether drifts

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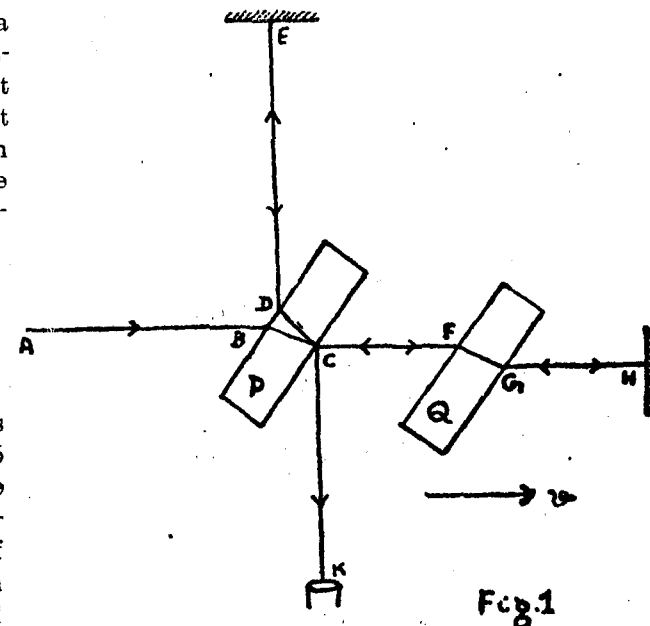
along with matter, there should be no aberration at all. But aberration was actually observed and this suggested that ether is absolutely at rest, even that part of it which penetrates moving bodies. This No-Drift theory of H. A. Lorentz, however, met with difficulties in its turn; and between the contradictory no-drift and complete-drift theories, arose the hypothesis of Fresnel and Fizeau, according to which the ether is *partially carried* along by bodies in motion. An experiment conducted by Fizeau on the aberration of light with a tube filled with water clearly demonstrated that the water carried along with it the ether with a drift velocity that compared with the velocity of the moving water as $\left(\frac{\mu^2 - 1}{\mu^2}\right)$, called *Fresnel's coefficient* of ether-drag, since Fresnel had arrived at the same result on different theoretical grounds.

There was thus the need for a crucial experiment to decide between the partial and no-drift theories and to shed authentic light on the question of relative motion between moving bodies and the ether. Michelson and Morley applied themselves to the task.

Michelson-Morley Experiment

The earth, as we know, travels round the sun at the rate of 18.5 miles per second. According to the classical theory if the earth is moving through ether, the velocity of light as observed on the earth should be different when measured in the direction of motion of the earth, from that measured in a direction at right angles to the motion of the earth. Michelson and Morley, using a Michelson interferometer, made the measurements. A beam of light

AB [Fig. 1] is partly reflected by the back surface of a block of glass P and partly transmitted. The reflected beam strikes the mirror E and is reflected along the path EDCK. The transmitted beam strikes the mirror H and is reflected back along the path HGFC. Q is simply a compensating plate. Interference happens and bright and dark fringes are seen in the field of the telescope placed at K. In the experiment, CH and CE are equal. Let $CH = CE = d$. If CH is in the direction of motion of the earth and CE perpendicular to it, there should be a difference between the time for the light to travel over the path CEC and the time over the path CHC. Let c be the velocity of light relative to the ether and v the velocity of the earth. When the light is travelling from C to H its velocity relative to the earth is $(c - v)$, while, when travelling from H



to C is $(c + v)$. Hence the total time for light to travel from C to H and back to C is

$$t_1 = \frac{d}{c - v} + \frac{d}{c + v} = \frac{2cd}{c^2 - v^2} = \frac{2d}{c} \left(1 + \frac{v^2}{c^2}\right) \quad (1)$$

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Next, considering the time for the light to travel from C to E and back to C, the point C moves to C' [FIG. 2] due to the motion of the earth while the light travels from C to E and back. The path in the ether is C to E and E to C', and the velocity in the ether is c along CE and EC'. The velocity relative to the apparatus is along DE. This relative velocity is the

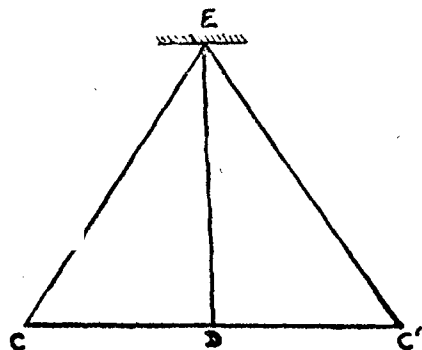


Fig. 2

vector difference of c along CE and v along CD. Hence the velocity of light relative to the apparatus is $\sqrt{c^2 - v^2}$. Since the distance travelled on the apparatus is $2d$ the time for the light to travel from C to E and E to C' is

$$t_2 = \frac{2d}{\sqrt{c^2 - v^2}} = \frac{2d}{c} \left(1 + \frac{v^2}{2c^2}\right) \quad \dots (2)$$

Hence the difference in time for the two paths is

$$t_1 - t_2 = \frac{2d}{c} \cdot \frac{v^2}{2c^2} \quad \dots (3)$$

And the effective optical path difference between CHC and CEC is

$$\delta = \frac{c(t_1 - t_2)}{\lambda} = \frac{v^2 d}{c^2 \lambda} \text{ wave-lengths} \quad \dots (4)$$

If now the apparatus is turned through a right angle, the light paths are caused to exchange rôles, the total path difference change will be $\frac{2v^2 d}{c^2 \lambda}$ wave-lengths, and con-

sequently the number of fringes which pass the cross-wires of the telescope is $\frac{2v^2 d}{c^2 \lambda}$. In one of the first experiments of Michelson and Morley, performed in 1881, at the Norman Bridge Laboratory, Pasadena, the distance d was 11 metres, this being achieved by successive reflexions. With $\lambda = 5000 \text{ \AA}$ a shift of 0.4 fringe-width was expected. The actual displacement observed was less than 1/20 of this amount—a negative result. The chief difficulties encountered in this experiment were the distortion of the apparatus produced when rotating it and its extreme sensitiveness to vibrations. The latter was so great that the interference fringes could not be observed when working in the city, except at brief intervals, even at two o'clock in the morning. These difficulties were surmounted by placing the apparatus on a massive sandstone floating in mercury placed in a cast-iron trough which was cemented into a low brick pier. The stone rested on an annular wooden float such that there was a clearance of 1 c.m. between it and the sides of the iron trough. A pin kept the float concentric with the trough and during the observation, the apparatus was kept in slow uniform rotation making one revolution in about 6 minutes. More recent experiments by Prof. Dayton Miller in 1921 and later in 1924 at Mount Wilson Observatory, numbering about 5000, with an apparatus designed to keep off disturbances of magnetic and thermic origin, pointed out as limitations in the original experiment, showed that the shift, if it existed at all, was less than 1/40 of the calculated amount, thus again leading to a negative result.

Trouton and Noble, in 1904, attempted to solve the problem by a different type of experiment, which we shall describe now.

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Trouton-Noble Experiment

The apparatus consisted of an electric condenser suspended with its plates vertical by a fine wire. The condenser was charged by means of this wire and another hanging from beneath and dipping into mercury. The electric field between the plates, since it is moving through the ether, due to the earth's motion, produces a magnetic field which varies as $\sin \theta$, where θ is the angle between the electric lines of force of the condenser and the direction of earth's motion. Since the energy of the magnetic field varies as H^2 , the energy of the field varies as $\sin^2 \theta$. The condenser should tend, therefore, to turn so as to make the magnetic energy a minimum and this happens when $\theta = 0$. In the experiment, the plates were charged and a turning effect was looked for, but no such effect was observed, and we have thus another negative result showing that the theory of the expected but unfound result might after all be wrong.

It should be noted that the negative testimony of such carefully performed experiments is merely the starting point and is in no way the basis of Einstein's theory of Relativity. We need not therefore deal with the final fate of such experiments. They are not perhaps so convincing as they were supposed to be.

The *Stationary Ether Hypothesis* had, already, in Lorentz's hands, triumphed over a wide range of experiments. But the negative testimony of the Michelson-Morley and Trouton-Noble experiments was more than a trivial thorn in its flesh. A heroic remedy was provided by Fitzgerald, who contended that the forces holding a body together may be altered by the motion of the body through ether.

The alteration may be such as to cause a shortening of that arm of the Michelson apparatus, which is parallel to the direction of motion, the extent of the shortening being exactly sufficient to counteract the extra time which light would take in consequence of the ether wind. Further, the fact that motion between the earth and the ether cannot be detected set Lorentz wondering if electro-magnetic equations are not the same for bodies in motion as for those at rest. To maintain the equations the same, he found it necessary to alter space and time measurements in a special way. A length d in the direction of motion is shortened to $d \sqrt{1 - v^2/c^2}$, while length of path at right angles is altered by a negligible amount. In the Michelson-Morley experiment, utilising the above stated assumption,

$$\begin{aligned} t_1 &= \frac{2}{c} \cdot d \sqrt{1 - \frac{v^2}{c^2}} \cdot \left(1 + \frac{v^2}{c^2}\right) \\ &= \frac{2d}{c} \left(1 - \frac{v^2}{2c^2}\right) \left(1 + \frac{v^2}{c^2}\right) \\ &= \frac{2d}{c} \left(1 + \frac{v^2}{2c^2}\right) = t_2 \quad \dots (5) \end{aligned}$$

This explains why there is no appreciable displacement of fringes.

But all this was a purely mathematical device, without any underlying physical concept—at the most an "ad hoc" hypothesis, offering an explanation of the negative result of the Michelson-Morley experiment.

Einstein's Revolutionary Idea

The signal for revolution was the declaration in 1905 by Einstein that *motion through ether is a meaningless concept*. This smashing of the time-

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honoured hypothesis of motion in ether had to be brought into alignment with the known laws of Optics. Radically new interpretations of space and time were accordingly proposed, and thus the foundation for the new theory of Relativity was laid.

The Theory of Relativity is usually divided into two parts: the *Special* or *Restricted* theory and the *General* theory. The special theory was formulated in 1905 to deal with problems where one frame of reference is moving with constant velocity with respect to a second frame—in other words where one observer and his measuring instruments are moving with constant velocity with respect to a second observer and his instruments. In 1915, the theory was further extended to interpret more general cases of motion, where one of the frames of reference moves with an accelerated velocity relative to the other. This extension is called "General Relativity" whose chief achievement is the explanation of the law of gravitation on a more refined and more accurate basis. We shall now outline the main features of the theory of Einstein under both aspects.

Restricted Relativity

Principle of Relativity and Einstein's postulates

According to classical physics, the supposition is that all objects can be located in "absolute space", and all events, wherever they occur, can be assigned positions uniquely and objectively on an everflowing stream of "absolute time." But what exactly is space?—indeed an annoying question! This fundamental difficulty arises chiefly because of the abstractness of space. We are able to recognise the existence of

space only by the presence of material bodies in it. If, for a moment, we imagine all material bodies to be removed from around us, the conception of space would definitely be a difficult one to realise. When the idea of space itself is so abstract, no wonder "motion in space" becomes all the more so. Again, just what is time? Why is it that time goes only in one direction? In Physics, there is a quantity, known as entropy, and there is a law which states that the entropy always tends to increase with time, which therefore can be considered as defining the direction of time. Since entropy can be thought of as a measure of randomness, if one could imagine a state of affairs, where the randomness cannot be increased and the entropy remains stationary, there would be no direction to time and time would cease. The Universe is running down as time goes on. When it has completely run down so that everything is at a uniform temperature, and all motion is random, there will be no time. Hence the direction of time is related to the direction in which the randomness of the Universe is increasing. It is, therefore, very difficult to define "absolute time" as such.

Likewise, it is impossible to demonstrate the uniform rectilinear motion of a material system by observations made within the system itself. There is no such thing as an independently existing trajectory, but only a trajectory relative to a system of coordinates connected rigidly with the observer. A ball thrown up by an observer in a moving train traces a straight line path for him, while, to another, outside and at rest, the path appears parabolic. It is to counteract this difficulty that Newton did away with the distinction between a state of rest and of uniform motion in a straight line. If we

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suppose S' —a coordinate system i.e., a system of reference used to fix the position of bodies in space—to be in uniform translatory motion, with respect to S , a stationary system of coordinates, then natural phenomena in relation to S' are exactly the same as with respect to S . This is the well-known "*Newtonian principle of Relativity*."

The inadequacy of classical physics in explaining classical phenomena became apparent also with the epoch-making discoveries of Lorentz in the field of Optics and Electrodynamics. Just to cite an example: Simple considerations of a beam of light projected from a moving body leads to the expression $u = c - v$ where v is the velocity of the moving body, c is the velocity of light with respect to an unmoving frame, and u the velocity of light relative to the body in motion. This contradicts the Newtonian principle of Relativity enunciated, since, like any other general law of nature, the law of transmission of light in vacuum must be the same, whether the moving body or fixed frame is used for reference. It is to give physical reality to this apparent incompatibility that the Theory of Relativity has been proposed.

The two main guiding principles in the development of the theory are:

(i) The laws by which the states of physical systems undergo changes are not affected, whether these changes be referred to one or other of two systems of coordinates in uniform translatory motion.

(ii) Any ray of light moves in the "Stationary" system with a determined constant velocity c , whether the ray be emitted by a stationary or by a moving body.

The theory departs from classical mechanics not through the postulate of

relativity, but through the postulate of the constancy of velocity of light in vacuum, from which, in combination with the principle of Relativity, there follow very important deductions such as the futility of ether, the relativity of simultaneity, Lorentzian transformation equations, the related laws for the behaviour of moving bodies etc.

It is to be emphasised that the validity of the principle of Relativity is here assumed only for reference bodies, one of which is in a state of rectilinear and non-rotatory motion with respect to the other. It is in this sense that the theory is said to be "restricted". In contrast to this, in the generalised theory of Relativity, all systems of reference, irrespective of the nature of motion, are equivalent for the description of natural phenomena.

Futility of Ether

The proposed theory, at least indirectly, tolls the death-knell for the classical frame of reference—ether, with respect to which bodies were considered to be at rest or in motion. The existence of a hypothetical medium, called ether, has for long remained a necessary axiomatic assumption, defined by the exigencies of the circumstances and in consequence, often resulting in glaring contradictions. Thus, ether is supposed to be the *most rigid elastic solid* to account for transverse light waves, while at the same time, it should be *rarer than the most rarefied gas*, which penetrates all space, but does not offer any resistance to the motion of bodies—a concept evidently involving intrinsic contradictions. Such a medium was the life centre of Fresnel's elastic solid theory of light waves. The electromagnetic theory minimised the contradictions involved to some extent. Einstein, however, was impressed by the fact that, Maxwellian electrodynamics, as

originally interpreted and applied, leads to asymmetries, which do not show themselves in any observations. Reflexions such as these, combined with the problem raised by the negative results of the ether-drift experiments, led Einstein to first reduce the ether to a mere shadow and ultimately ignore it, adopting as a fundamental principle that relative motion alone determines the nature of the phenomena observed. This bold venture renders the classical view, of the nature of electromagnetic waves untenable. The transport of energy associated with them requires that we must either assume a medium, ether, in which the energy is seated, or adopt an entirely new significance of Maxwellian•electromagnetic theory. The latter alternative is forced on us not only by the theory of Relativity, but also by the observed facts of Photoelectricity and Optical spectra, and their theoretical explanation by Planck's Quantum theory, more especially by its modern developments, among which may be mentioned the Wave Mechanics of Louis de Broglie and Edwin Schrodinger. Roughly speaking, we have to revert to Newton's views of the nature of light as a stream of corpuscles, with which is associated some kind of periodicity and which propagate in absolute vacuum with a velocity that depends upon their own intrinsic properties *i.e.*, upon their energy content, which is, however, a function of the constant standard, the velocity of light.

Relativity of Simultaneity

Another important revolution brought in by Einstein's theory is in the *concept of time*. According to Einstein, the term "simultaneity" loses all meaning. Events which are simultaneous with respect to a fixed frame are not so with respect to a moving frame and vice-versa. In other words, every reference body has its own

particular time; unless we are told the reference body to which the statement of time refers, there is no meaning in a statement of the time of an event.

The theory thus knocks down the idea derived from classical mechanics that the time elapsing between two events' is independent of the condition of motion of the body of reference. This applies equally to the distance between two points of a rigid body, which, in contradiction to classical concepts, can be easily shown to be dependent on the motion of the body of reference.

We shall start by defining the term "synchronous" with respect to clocks. When the time is t_A at a point A, let a ray of light start from A and travel towards another point B. Let it reach B when the time is t_B at B. Let it get reflected at B and reach A when the time is t'_A at A. The two clocks, at A and B are defined as synchronous' if $t_B - t_A = t'_A - t_B$ *i.e.*, the time required by light to travel from A to B equals that required to travel from B to A.

Let there be a given stationary rigid rod and let its length be l as measured by a measuring rod which is also stationary. Let the axis of rod be along the X-axis of the stationary system and let a uniform motion of parallel translation with velocity v along X-axis, in the increasing direction of x , be now imparted to the rod. Let the length be measured by the following two operations :

(a) The observer moves together with the given measuring rod and the rod to be measured, and measures the length of the rod directly by superposing the measuring rod in just the same way, as if all three were at rest.

(b) By means of stationary clocks set up in the stationary system, the observer ascertains at what points of the stationary system, the two ends of the rod to be measured are located at a definite time. The distance between these two points measured by the measuring rod already employed, which in this case, is at rest, is also a length, which may be designated the length of the rod.

Classical kinematics tacitly assumed that the lengths determined by these two operations are precisely equal. But, in accordance with the principle of relativity, the two must be different. The length, discovered by operation (a), will equal l , while that discovered by operation (b) will not.

Let us imagine that at the ends A and B of the rod are placed clocks, which synchronise with the clocks of the stationary system. We imagine further that with each clock there is a moving observer, and that these observers apply to both clocks the criterion established before, for the synchronisation of the two clocks. Taking into consideration the constancy of the velocity of light, we find that

$$t_B - t_A = \frac{r}{c-v}; t'_A - t_B = \frac{r}{c+v} \dots (6)$$

where r denotes the lengths of the moving rod. Observers moving with the moving rod would thus find the two clocks not synchronous, while observers in the stationary system would declare them to be synchronous.

So we see that we cannot attach any absolute significance to the concept of simultaneity, but that two events, which, viewed from one system of coordinates, are simultaneous, can no longer be looked upon as simultaneous events, when envi-

saged from a system, which is in motion relative to that system.

According to Einstein, therefore, a physical "event" is never merely a "fact," because, at least some of its aspects are manifested somewhere to somebody. The objective relativists have taught us that the same occurrence has many actual sizes and shapes from different "standpoints." To this we can add that it has also many potential sizes and shapes from unoccupied "standpoints." Furthermore, a physical event, as a source of manifestations, can be said to have many dates, with respect to different "standpoints," and to be, in this sense, at once past, present and future. As a source of appearances, an event is inexhaustible, since, there is always some "standpoint," however distant, from which some of its appearances can be perceived. This inexhaustible power of an event deprives its descriptions of absolute finality, since, by taking a new position of view, the description can be enriched. For the same reason, a past event has no finality of absolute past. Thus Einstein's theory postulates that past, present and future are but relative and the concept of absolute time is meaningless. Laws of physical time no longer stand inviolable.

Transformation Equations

It devolves upon us now to try to conceive of a relation between the place and time of individual events relative to two reference systems, adhering to the constancy of velocity of light.

Let S and S' [Fig 3] represent two co-ordinate systems. Any event, P, wherever it might happen, is fixed in space with respect to S by three perpendiculars x, y, z on the co-ordinate planes and with regards to time, by a time value t . Relative to S', the same event would be fixed in

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respect of space and time, by corresponding values, not identical with x, y, z and t . Let the X-axis of both the systems permanently coincide. An event, localised on

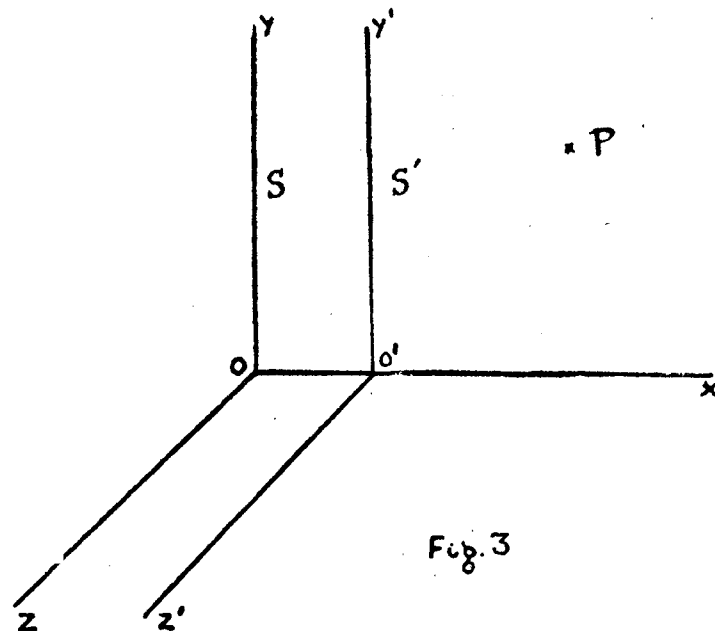


Fig. 3

X-axis, can be represented, with respect to S, by the abscissa x and, time t , and, with respect to S', by x' and t' . A light signal along the positive X-axis is transmitted according to the equation

$$x - ct = 0 \quad \dots (7)$$

Since the same signal has to be transmitted relative to S' with the velocity c , the propagation relative to S' is represented by

$$x' - ct' = 0 \quad \dots (8)$$

For an event to satisfy both the equations,

$$x' - ct' = \lambda (x - ct) \quad \dots (9)$$

where λ is a constant. Along the negative direction of the X-axis,

$$x' + ct' = \mu (x + ct) \quad \dots (10)$$

where μ is another constant. Putting

$$\frac{\lambda + \mu}{2} = a \text{ and } \frac{\lambda - \mu}{2} = b, \text{ we obtain}$$

$$x' = ax - bct \quad \dots (11)$$

$$ct' = act - bx \quad \dots (12)$$

Corresponding to $x' = 0$, $x = \frac{bc}{a} t$. Hence

the relative velocity v of S' with respect to S is equal to

$$\frac{x}{t} = \frac{bc}{a}$$

Now, from the principle of relativity, the length of a measuring rod at rest with respect to S', as judged from S, will be exactly the same as that of the rod, at rest with respect to S, when judged from S'.

The putting of $t = 0$, signifies judgement from S. From equation (11), for $t = 0$, we get:

$$x' = ax$$

$$\text{or } \Delta x' = a \Delta x$$

$$\text{i.e. } \Delta x = \frac{1}{a}, \text{ when } \Delta x' = 1 \quad \dots (13)$$

Two points on the X-axis, separated by a distance $\Delta x' = 1$, measured in system S' will appear from S to have a separation $\Delta x = \frac{1}{a}$.

Further, from equation (12), t' being zero, and since $b = \frac{va}{c}$, we get

$$act = bx$$

$$\text{i.e. } t = \frac{bx}{ac} = \frac{va}{ac^2} x = \frac{v}{c^2} x$$

In consequence, $x' = ax - bct$ transforms into

$$x' = ax - \frac{va}{c} \cdot c \cdot \frac{v}{c^2} x = a \left(1 - \frac{v^2}{c^2} \right) x$$

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$$\text{When } \Delta x = 1; \Delta x' = a \left(1 - \frac{v^2}{c^2} \right) \quad \dots (14)$$

This means that two points on the X-axis, separated by $\Delta x = 1$, measured in the S-system, will appear from S' to have a separation $\Delta x'$ given by equation (14). Since the two values of separation must be identical,

$$\frac{1}{a} = a \left(1 - \frac{v^2}{c^2} \right) \text{ or } a^2 = \frac{1}{\left(1 - \frac{v^2}{c^2} \right)} \quad \dots (15)$$

Now, substituting in equation (11),

$$x' = \frac{x - vt}{\sqrt{1 - \frac{v^2}{c^2}}} \quad \dots (16)$$

And substituting in equation (12)

$$t' = \frac{t - \frac{vx}{c^2}}{\sqrt{1 - \frac{v^2}{c^2}}} \quad \dots (17)$$

Equations (16) and (17) are further supplemented by

$$y' = y \text{ and } z' = z \quad \dots (18)$$

These equations are known as *Lorentzian Transformation Equations*.

A most remarkable consequence of these new transformation equations is $t' \neq t$. In other words, clocks in the two frames run at different rates.

The simple Lorentzian transformation leads to interesting results:

i) Length contraction

Let us consider a rod of length l_0 at rest along X-axis of S. Let it be set moving with such a velocity, that it is at rest with respect to S'. Its length in S' will be l_0 still. Let us find out what the distance will be between two points on system S, which are instantaneously occupied by the ends of the rod.

Let us call it l . Then

$$l = (x_2 - x_1); l_0 = (x'_2 - x'_1) \quad \dots (19)$$

From the transformation equations,

$$l_0 = \frac{(x_2 - x_1)}{\sqrt{1 - \frac{v^2}{c^2}}} = \frac{l}{\sqrt{1 - \frac{v^2}{c^2}}} \quad \dots (20)$$

There is thus a shortening of the rod in the direction of its motion, as perceived from a stationary frame.

(ii) Time Contraction

Let a clock beating seconds be permanently at the origin of S' so that $x' = 0$. To the two successive ticks of the clock correspond the time values $t' = 0$ and $t' = 1$. From equation (16), x' being zero,

$$\text{Again, } t' = \frac{t - \frac{vx}{c^2}}{\sqrt{1 - \frac{v^2}{c^2}}}$$

If $t' = 0$, $t = \frac{vx}{c^2} = \frac{v^2}{c^2} t$ i.e. $t = 0$ since $v \neq c$

If $t' = 1$, $1 = t \left(\sqrt{1 - \frac{v^2}{c^2}} \right)$ i.e. $t = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$

The time elapsing between two ticks as judged from S is hence greater than 1 sec. The moving clock will thus go slower. This is briefly alluded to as *Time Dilatation*.

(iii) Addition of Velocities

The Lorentzian transformation equations lead to the relativistic formula for the addition of velocities. Thus, assuming the transformation equations, we can establish

$$u = \frac{u' + v}{1 + \frac{u'v}{c^2}} \quad \dots (21)$$

where u' is the velocity of the body in

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frame S' , u that observed from S , and v the velocity of S' with respect to S . This is the relativistic formula for the addition of velocities.

It is worth while to test this equation for particular cases. For the case of $u'=c$, the equation gives $u=c$ and Einstein's condition that the resultant velocity cannot be greater than c is satisfied. Hence we have the rather paradoxical statement that if a velocity v is added to the velocity c , the resultant is still c . Likewise, if a velocity v is subtracted from the velocity c , the resultant is still c . Thus c in Relativity enjoys a position akin to infinity in mathematics.

On the basis of the above equation, it is possible to satisfactorily explain Fizeau's aberration experiment. We shall take u' as the velocity of light in water of refractive index μ . Then $u' = \frac{c}{\mu}$. If v represents the velocity of moving water, and u the velocity of light in moving water,

$$u = \frac{v + \frac{c}{\mu}}{1 + \frac{vc}{\mu}} = \frac{c}{\mu} \left(1 - \frac{v^2}{c^2}\right) + v \left(1 - \frac{1}{\mu^2}\right) \\ = \frac{c}{\mu} + v \left(1 - \frac{1}{\mu^2}\right) \text{ since } v \text{ is small} \\ = u' + kv \text{ where } k = 1 - \frac{1}{\mu^2}.$$

This was precisely the expression obtained by Fresnel and Fizeau. Thus the results of Fizeau's experiment get explained.

It ought to be noted that this formula for the addition of velocities does not imply that velocities greater than c are impossible: it simply says that velocities greater than c cannot be had by the

composition of any number of velocities less than c .

(iv) Variation of Mass with Velocity

The definition of the momentum of a body in Relativity theory is the same as in classical dynamics viz.

$$\text{Momentum} = mu$$

where m is the mass and u the velocity of the body. But in Newtonian dynamics, m is a constant, independent of the velocity, while in Relativity dynamics, m varies with the velocity. We shall now derive an expression for this variation of mass with velocity.

Let us suppose that in frame S' , two bodies of equal masses m' travelling with velocities u' and $-u'$ parallel to OX collide and, after collision, coalesce into one body. This is a simplifying assumption, for, the final result can be proved for any kind of impact. Since the principle of conservation of mass holds in Relativity also, we have that the mass of the coalesced bodies after collision is $2m'$. The principle of conservation of momentum also holds so that the coalesced bodies are at rest in S' after collision. Let us now consider the appearance of the experiment to an observer in frame S . The velocities u' and $-u'$ transform into, by virtue of the equation for the addition of velocities, u_1 and u_2 where

$$u_1 = \frac{u' + v}{1 + \frac{u'v}{c^2}} \text{ and } u_2 = \frac{-u' + v}{1 - \frac{u'v}{c^2}} \quad \dots (22)$$

Now investigations in the theory of electro-magnetic field show that we should rigorously preserve the principle of conservation of momentum, and may allow the "inertial" mass to vary. Hence let us assume that to the observer in S , the mass of the body travelling with velocity u_1 is m_1 and that of the one

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travelling with velocity u_2 is m_2 . The sum of the momenta before impact is equal to the total momentum after impact. Hence,

$$m_1 u_1 + m_2 u_2 = (m_1 + m_2) v \quad \dots (23)$$

For, after collision, the coalesced bodies travel with velocity v with respect to S , since they are at rest in S' . Substituting for u_1 and u_2 we have

$$\frac{m_1}{m_2} = \frac{1 + u'v/c^2}{1 - u'v/c^2} \quad \dots (24)$$

From equations (22), it can be shown that

$$\frac{u'v}{c^2} = \frac{2c^2 - u_1^2 - u_2^2 - 2\sqrt{(c^2 - u_1^2)(c^2 - u_2^2)}}{(u_1^2 - u_2^2)} \quad (25)$$

Substituting this in equation (24) we get

$$\frac{m_1}{m_2} = \frac{\sqrt{1 - u_2^2/c^2}}{\sqrt{1 - u_1^2/c^2}} \quad \dots (26)$$

If the body of mass m_2 is moving with zero velocity with respect to S' before collision, so that $u_2 = 0$, then

$$m_1 = \frac{m_2}{\sqrt{1 - u_1^2/c^2}}$$

Now both bodies have the same mass when moving with the same velocity, so that the above equation means that m_1 is the mass of the body when it is moving with velocity u_1 and its rest-mass is m_2 . In the usual notation,

$$m = \frac{m_0}{\sqrt{1 - \frac{u^2}{c^2}}} \quad \dots (27)$$

This is the Relativity formula for the variation of mass with velocity; m_0 is called the *Rest Mass* of the body and corresponds to a state of absolute rest of the body. We have proved the above equation for a head-on collision where the bodies coalesce. Lewis and Tolman, in 1909, showed that the formula holds for collisions of any type.

The difference between the classical and Relativity expressions for mass is clearly not so important so long as u is small compared to c . As the velocity of a body approaches that of light, however, the mass increases tending towards an infinite value when $u=c$. This gives us an additional sense in which we can regard c as a limiting velocity. But here again we have no justification in saying that a velocity greater than c is meaningless. All that the above statement implies is that a material body cannot attain it. In wave mechanics, phase velocities which exceed c are indeed contemplated.

(v) Mass-Energy Equation

Energy may be defined in terms of work, which is Force $\times$ displacement. And 'force' being the rate of change of momentum, is

$$\text{given by } F = \frac{d(mu)}{dt} \quad \dots (28)$$

But since both mass and velocity are variables here,

$$F = m \frac{du}{dt} + u \frac{dm}{dt} \quad \dots (29)$$

Hence the kinetic energy due to motion is given by

$$W = \int F dx = \int m \frac{du}{dt} \cdot dx + \int u \frac{dm}{dt} \cdot dx \quad (30)$$

Now $\frac{du}{dt} \cdot dx = \frac{dx}{dt} \cdot du = u \cdot du$ and similarly

$\frac{dm}{dt} \cdot dx = u \cdot dm$. Hence

$$W = \int mu \cdot du + \int u^2 dm \quad \dots (31)$$

Substituting for m as $\frac{m_0}{\sqrt{1 - u^2/c^2}}$ in (31)

we get

$$W = m_0 \int_0^u \frac{u du}{\sqrt{1 - \frac{u^2}{c^2}}} + \frac{m_0}{c^2} \int_0^u \frac{u^3 du}{\left(1 - \frac{u^2}{c^2}\right)^{3/2}} \quad (32)$$

This works out to be, on the application of standard integrals, as

$$W = m_0 c^2 \left\{ \frac{1}{\sqrt{1 - \frac{u^2}{c^2}}} - 1 \right\} \quad \dots (33)$$

By Binomial expansion,

$$W = m_0 c^2 \left(1 + \frac{1}{2} \frac{u^2}{c^2} + \frac{3}{8} \frac{u^4}{c^4} + \dots - 1 \right)$$

When u is small compared with c , the relation approximates to the Newtonian form

$$W = \frac{1}{2} m u^2.$$

Now, since $m = \frac{m_0}{\sqrt{1 - \frac{u^2}{c^2}}}$, equation (33) can be written in the form

$$W = (m - m_0) c^2 \quad \dots (34)$$

This expression indicates that the kinetic energy of motion is the actuating influence of the increase in mass. It further throws the hint that what we have called the 'rest-mass' m_0 has to be understood as an internal store of energy in the body. Since the total energy E possessed by a moving body is constituted by the kinetic energy of motion and the stored-up internal energy,

$$E = W + m_0 c^2 = m c^2 \quad \dots (35)$$

This is the famous Einstein's *Mass-Energy Relation*, stating an universal equivalence between mass and energy. The inertial mass $m = \frac{E}{c^2}$ thus appears to be more the characteristic of energy than of matter as such. We may also think of an energy E as corresponding to a mass $\frac{E}{c^2}$.

Every change in the energy of the body involves an alteration in its mass. The relation thus leads to the concept of the convertibility of energy in terms of mass, whatever be the form of energy—potential-kinetic, radiant or electromagnetic. Thus for instance, a wound watch spring has a

greater mass than when unwound. A rapidly rotating flywheel has a greater mass than when it is at rest. Again a body which emits radiant energy must lose in mass, while one which absorbs radiations should gain in mass. The variation in mass is, however, negligibly small under ordinary circumstances because of the large value of c involved in $m = E/c^2$.

The chief merit of Einstein's mass-energy relation is that it finds experimental verification for all types of energy and the validity of the Special theory of Relativity also gets 'ipso facto' established. We shall therefore indicate how the relation can be put to experimental test.

Potential Energy

Regarding *potential energy* the relation is verified in nuclear transformations. A Helium nucleus, for instance, contains two protons and two neutrons. The masses of the Helium nucleus, the proton and the neutron can be accurately measured by Mass Spectrograph methods. Then by the principle of conservation of mass, the mass of the Helium nucleus should be equal to the sum of the masses of the two protons and the two neutrons. But it is experimentally found that the former is always smaller than the latter, which amounts to saying that a certain mass has apparently disappeared, in the formation of the Helium nucleus from the two protons and two neutrons. Further, in the process of formation, about 28 Million electron volts of energy is liberated. If now this energy be converted into mass by Einstein's mass-energy equation, it is found to be exactly equal to the mass deficiency involved in the transformation. The accepted modern explanation of the deviation of the actually measured masses of isotopes from whole numbers is that these discrepancies called "mass defects" are

due to the energy liberated or absorbed in the process of building of the nuclei from constituent elementary particles. Again, in the case of transmutation of elements, introducing the mass change into the equation of transmutation as an energy change, additional to other usual energy changes has led not only to an adequate interpretation of the nuclear reactions actually studied but also to the correct prediction of other probable transmutations.

Kinetic Energy

The experimental verification for *kinetic energy* is had in a rather indirect way. Since the mass-energy relation implies the variation of mass with velocity, if we can verify the latter, in particular the equation

$$(27) \text{ viz. } m = \frac{m_0}{\sqrt{1 - \frac{u^2}{c^2}}}, \text{ the mass-energy}$$

equation for kinetic energy also gets verified. It is obvious that the variation of mass with velocity can be tested only with bodies whose velocities are very high, approaching that of light. Kaufmann and Bucherer used electrons of β -rays from Radium with widely differing velocities ranging upto as high as 0.99 c . Subjecting them to suitable magnetic and electric fields simultaneously they estimated the $\frac{e}{m}$ values for various velocities and showed that m/m_0 increases with velocity. This experiment, refined later by Wols and Newman, shows that the variation of mass is expressed correctly by the above given equation.

Radiant Energy

A spectacular proof of the mass-energy relation in the case of *radiant energy* is met with in the recently discovered, most wonderful phenomenon known as the "materialisation of radiant energy". When high-energy radiations like γ -rays are

absorbed by matter, under certain conditions, there is production of *positron-electron pairs*, as clearly evidenced by cosmic ray showers. Measuring the kinetic energies of the created pairs of electrons, their sum is always found to be less than the energy of the incident radiation by 1 MeV. Further the phenomenon occurs only when the energy of the incident radiation is greater than 1 MeV and never for lower energy radiations. On the other hand, the energy corresponding to the rest-mass of an electron or of a positron (their masses being equal as known from other sources) can be calculated by applying Einstein's mass-energy equation, and it is found to be $\frac{1}{2}$ MeV. The energy corresponding to the total mass of a pair is hence equal to 1 MeV, just the amount which has disappeared from the energy available in the process. The experimental facts lead us not only to interpret the phenomenon as a veritable materialisation of radiant energy, establishing thus the convertibility of energy into mass, but also to admit the validity of the mass-energy equation.

Electromagnetic Energy

J. J. Thomson has shown, on the basis of the classical electromagnetic theory, that the electron has a mass solely by virtue of its charge. Now since a charge has energy associated with it this leads to the idea that electromagnetic energy is equivalent to mass. Although this seemed sufficient reason for Thomson to proceed to the sweeping assumption that all mass is electrical, we shall regard it, for the moment, untenable, but shall only admit, within the range of the mass-energy equation, that electro-magnetic energy is equivalent to mass.

Thus the mass-energy equation, the final fruit of the Special Theory of Relativity, is verified for all forms of energy. The

importance of this equation is indeed universal and its applications wide and varied. Whether it be in purely theoretical physics or in applied science, the mass-energy equation always finds a place. The latest example in point that we can cite is the development of the Atom Bomb. It would certainly be not far from truth, if we assert that but for Einstein's mass-energy equation there would not have been this scientific marvel, the Atom Bomb. For, the nuclear fission of the Uranium atom and the consequent liberation of energy, which forms the kernel of the principle underlying the exploitation of atomic energy can be shown to be governed by Einstein's mass-energy equation.

In passing, we may realise that while Classical Physics has always maintained a clear-cut distinction between mass and energy, conceiving the former as something fundamental to matter, and the latter as an accidental quality of matter, the new theory of Relativity postulates an essential identity between mass and energy and thereby achieves a remarkable synthesis by the unification of the *two* distinct classical principles of the conservation of energy and of mass into *one* of mass energy equivalence.

Minkowski's Space-Time Continuum

So far we have dealt with the Special theory of Relativity from a purely physical standpoint. Minkowski has utilised the concept of Relativity to arrive at a new revolutionary fundamental Space-Time continuum. After Gauss in 1827 had developed a general theory of surfaces, the great mathematician Riemann, in 1854, showed how our usual three dimensional solid geometry may be regarded as a special case of a more general four-dimen-

sional geometry, in which space is curved. Moreover, as Riemann himself recognised, what holds for three-dimensional geometry should also apply to a geometry of any number of dimensions. On the basis of these conclusions, Minkowski in 1908, gave the following geometrical interpretation to the Special theory. As we have already seen, any event in any frame of reference S can be represented in space and time by the four co-ordinates (x, y, z, t) . If the same event is observed from another frame S', moving with constant velocity relative to S, its co-ordinates in S' will be (x', y', z', t') satisfying the equation

$$x^2 + y^2 + z^2 - c^2 t^2 = x'^2 + y'^2 + z'^2 - c^2 t'^2 \quad \dots (36)$$

Minkowski said that we may treat the square of the product of time and the velocity of light, taken with a negative sign, as the square of a fourth co-ordinate in a four-dimensional geometry. This four-dimensional manifold, which appears as a linking together of space and time is known as the "Minkowski World," where the so-called "World Co-ordinates" are represented by the four quantities x, y, z and ict ($i = \sqrt{-1}$). A point represented by these quantities is known as a "World Point". Quantities which can be represented by directed intervals in the Minkowski World are called "World Vectors". The motion of a particle may thus be represented by a so-called "World Line", which expresses the dependency of the path on the time, while its projection in three-dimensional space gives the course of its path. This, however, in no way implies that every world-line may be regarded as representing a motion.

We can here outline only the elementary principles of Minkowski's theory. Let $w = ict$ so that

$$x^2 + y^2 + z^2 - c^2 t^2 = x'^2 + y'^2 + z'^2 - c^2 t'^2$$

Thus if we take (x, y, z, w) to be a point in the four-dimensional space, the distance of the point from the origin is given by

$$\sqrt{x^2 + y^2 + z^2 + w^2}$$

If we rotate the axes x, y, z, w into a new position, the distance of the same point from the origin, in terms of the new co-ordinates, will be

$$\sqrt{x'^2 + y'^2 + z'^2 + w'^2}$$

and, of course, this distance is unchanged by the change of axes. Again, if s be the distance between two points (x_1, y_1, z_1, w_1) and (x_2, y_2, z_2, w_2) in four-dimensional space,

$$s^2 = (x_2 - x_1)^2 + (y_2 - y_1)^2 + (z_2 - z_1)^2 + (w_2 - w_1)^2$$

$$\text{And } ds^2 = dx^2 + dy^2 + dz^2 + dw^2 = dx^2 + dy^2 + dz^2 - c^2 dt^2 \quad \dots (37)$$

where ds is called the "World-line-element". Further, Minkowski establishes from a comparison with Lorentzian transformation equations, that changing from a frame S with axes x, y, z, t to a frame S', with axes x', y', z', t' and moving relatively to S along OX with a velocity v , is equivalent to rotating the axes x, y, z, w through an angle θ in the $x-w$ plane such that

$$\cos \theta = \frac{1}{\sqrt{1 - v^2/c^2}} \quad \dots (38)$$

Since $\cos \theta > 1$, θ is an imaginary angle.

If we include now the y and z axes along which there is no motion, we must regard them as remaining unchanged in rotation, and we may then form a geometrical "picture" of a four-dimensional region or "continuum" in which the Lorentzian transformation for a particular velocity v is represented by a rotational displacement of the x and w axes through a particular angle θ . This picture of a

four-dimensional space is usually described as "Space-Time Continuum". If dx, dy, dz, dw are the coordinate differences between two points in such a continuum, ds may be called the distance between them. Generally, however, ds is known as the "interval" between the two points, the term "distance" being reserved for its analogue in three-dimensional space. The continuum implied by the equation

$$ds^2 = dx^2 + dy^2 + dz^2 - c^2 dt^2$$

is regarded as describing the course of events in the physical world. The fundamental point to be borne in mind in this connexion is that the Minkowski four-dimensional continuum is essentially metaphorical. For, space and time in themselves vanish to shadows and only a union of the two exists in its own right. To symbolise this association of space and time by the image of coordinates in an imaginary continuum and then to endow it with reality is something which has first to be understood before being appreciated.

General Theory

We have been dealing so far with the special theory concerning uniform rectilinear motion. We shall now briefly review the essential features of the General theory. Einstein soon felt the need of extending the principle of relativity to any kind of motion, in particular to accelerated motion, which is involved in the simplest and most universal of physical phenomena viz *gravitation*.

Let S be a Galilean system of reference i.e. a system relative to which a mass, sufficiently distant from other masses, is moving with uniform motion in a straight line. Let S' be a second system moving in uniformly accelerated translation relative to S. Then the above mentioned mass

would have an accelerated motion relative to S' , the rate and direction of acceleration being independent of the material composition and physical state of the mass.

Does this permit an observer at rest relative to S' to infer that he is on a really accelerated system? No, for S' may be unaccelerated and the space-time territory in question may be under the sway of a gravitational field. This is made evident by a close scrutiny of what is known as 'centrifugal force' which has no real existence. Consider a stone attached to the end of a string and whirled round, the stone moving along a circular path. We know that a tension is developed in the string, which is called the 'centripetal force'. To an observer on the stone there is a force of repulsion, while to us there is not. Einstein saw that this apparent repulsive force is due to the curvilinear motion of the stone and he extended the idea of such motions to a sort of curved space in order to explain gravitational force. He then generalised this principle into what is known as the *Principle of Equivalence*, according to which the effects due to a gravitational field are precisely the same as those due to uniform acceleration of the material frame of reference relative to which the phenomena are observed, the acceleration being equal and opposite to the acceleration which the gravitational field gives to a particle in the frame. Hence there can be no difference between a gravitational field due to attracting matter and the apparent field due to the acceleration of the frame of reference. The principle of equivalence is found to hold good for electrical and optical phenomena as well. When we consider, for instance, a ray of light transmitted rectilinearly with respect to S , it is possible to show that the path of the same ray of light is no longer rectilinear, considered in

relation to the accelerated system S' . May we not, then conclude that, in general rays of light are propagated curvilinearly in gravitational fields? The curvature of rays of light can take place only when the velocity of propagation of light varies with position. We must, in consequence, cease to construe the constancy of the velocity of light as a proposition of unlimited validity.

Law of Gravitation

In the four-dimensional Minkowski world, we have already seen that the "world-lines" represent phenomena independent of any coordinate system. Further, the interval s between two points A and B , measured along a "world-line" joining the points is given by

$$s = \int_A^B ds.$$

And if AB is a straight line,

$$\delta \int_A^B ds = \text{zero} \quad \dots \quad (39)$$

Such a line satisfying the above equation is called a "geodesic line" or "geodesic", which is defined in geometry as the shortest line joining two points on a surface.

Now, since ds , being small, has the same value in any coordinate system even if we use curvilinear ones, instead of rectangular, the "worldline" $\int_A^B ds$ will still be a constant and will still be given by the above equation. If we grant the truth of the principle of equivalence, we may legitimately assume that in a gravitational field, the "world-line" is given by equation (39). Since a gravitational field distorts the "World-lines", we conclude also that rectangular coordinates are impossible in a gravitational field, which means that the

latter modifies space in such a way that the equation

$$ds^2 = dx^2 + dy^2 + dz^2 - c^2 dt^2$$

is no longer satisfied. Hence the gravitational field may be viewed as a curvature or distortion of the four-dimensional Minkowski world and the "world-lines" are geodesics in this distorted space. The equation for the geodesic given by (39) is purely geometrical, and hence, the gravitational acceleration is the same for all kinds of matter, as is experimentally found to be the case.

We shall now deduce a general expression for ds^2 . We have already established the equation

$$ds^2 = dx^2 + dy^2 + dz^2 + dw^2, \quad w \text{ being } iet.$$

If x_1, x_2, x_3, x_4 be the coordinates in a system, which can be used throughout the space, then in a small region represented by ds, x, y, z, w must be functions of x_1, x_2, x_3, x_4 , so that

$$dx = \frac{\partial x}{\partial x_1} \cdot dx_1 + \frac{\partial x}{\partial x_2} \cdot dx_2 + \frac{\partial x}{\partial x_3} \cdot dx_3 + \frac{\partial x}{\partial x_4} \cdot dx_4$$

with similar expressions for dy, dz and dw . Substituting these values of dx, dy, dz, dw in the equation for ds^2 , we can show that

$$\begin{aligned} ds^2 = & g_{11} dx_1^2 + g_{22} dx_2^2 + g_{33} dx_3^2 + g_{44} dx_4^2 \\ & + 2g_{12} dx_1 \cdot dx_2 + 2g_{13} dx_1 \cdot dx_3 + 2g_{14} dx_1 \cdot dx_4 \\ & + 2g_{23} dx_2 \cdot dx_3 + 2g_{24} dx_2 \cdot dx_4 \\ & + 2g_{34} dx_3 \cdot dx_4 \quad \dots \quad (40) \end{aligned}$$

where we shall content ourselves with stating that the g 's are functions of x_1, x_2, x_3, x_4 . An expression for ds^2 of this form holds for any system of coordinates and it is the fundamental equation from which the entire General theory is developed. The relation between the g 's and the properties of the curved space had been previously worked out by Riemann and other mathematicians so that Einstein was

able to use their results. The problem is to find the relation between the g 's in a gravitational field, which turns out to be sets of differential equations. Einstein selected one which seemed likely to be the correct one. In making this more or less arbitrary choice, he was guided by the knowledge that the Newtonian law of gravitation is a close approximation to the truth so that it was necessary to choose equations which gave results not far divergent from Newton's theory. He made also the assumption that in the absence of a gravitational field, the four-dimensional space is undistorted, so that the equation chosen had to satisfy this condition as well. He then worked out the law governing the motion of a small planet round a large attracting mass on the theory of tensors.

Without further proceeding with the complicated mathematical treatment developed by Einstein, we shall state the final result arrived at, as follows: "If any law of nature expressing results relative to a material frame of reference in terms of coordinates x_1, x_2, x_3, x_4 can be expressed by an equation $T=0$, where T is a tensor, then in terms of any other coordinate the law will be expressed by $T'=0$, where T' is the tensor into which T is transformed by the change from the first set to the second set of coordinates." The derivation of this necessitates a knowledge of covariant and contravariant tensors. The law of gravitation is capable of being put in the form $T=0$ like any other law of nature and can be reduced to a relation in g 's holding true in curved space. The g 's are analogous to Newtonian gravitational potential, which is given by

$$\Delta^2 \varphi = \frac{d^2 \varphi}{dx^2} + \frac{d^2 \varphi}{dy^2} + \frac{d^2 \varphi}{dz^2} = 0 \quad \dots \quad (41)$$

where φ is the potential. Since Newton's

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theory is certainly a good approximation to truth, we should expect the relation between the g 's in Einstein's theory to be also differential equations analogous to equation (41). It further occurred to Einstein to try the contracted Riemann tensor, usually represented as

$$R_{\mu\nu} = 0 \quad \dots (42)$$

which is a set of differential equations between the g 's of the second order like the above Newtonian equation, and the attempt has proved successful.

Experimental Evidences in 'favour of the General Theory

Having thus outlined the basic principles of the General theory, we are naturally led to ask for experimental evidences in favour of it. There are three striking astrophysical phenomena viz. (i) advance of the perihelion of Mercury (ii) bending of a ray of light due to a gravitational field (iii) shift of spectral lines, which establish beyond doubt the validity of the proposed theory. We shall now briefly describe how these confirmatory tests were made.

(i) Advance of the Perihelion of Mercury

According to Einstein, the space near a heavy mass is curved, so that any body which enters this space would travel in a curved path. The curvature of the space increases, the closer the body approaches the heavy mass. The orbits of the planets around the sun are explained on this basis. It so happens that, for the relatively distant planets, whose orbits

are nearly circular, the Einstein law of gravitation reduces to the Newtonian inverse square law. However, in the case of Mercury, the planet is so close to the sun and the orbit so eccentric that Einstein's law departs sufficiently from the Newtonian law for the two to give results divergent enough for an experimental test.

Now, what is meant by the perihelion of Mercury? The point P [Fig. 4] on the elliptic orbit where the planet approaches most closely to the sun, which is at one focus, is called the *Perihelion*, while the point A, where the planet is farthest from the sun, is called the *Aphelion*. The line AP is the major axis of the ellipse. According to Newton's theory, the major axis of the orbit of an *isolated* single planet around the sun should remain fixed in space. But as a result of the attraction

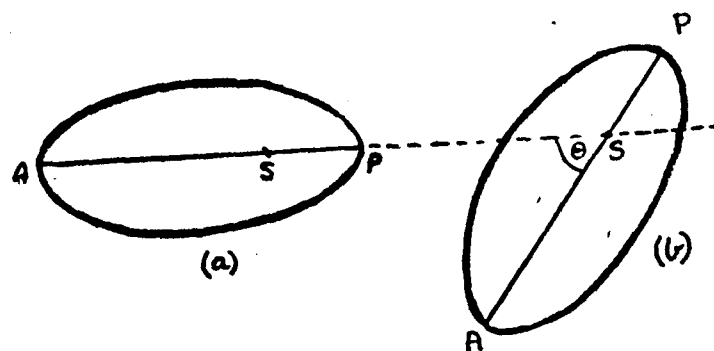


Fig. 4

between the various planets of the solar system, the major axis does not remain fixed in space, but rotates slowly so that a planet, which is revolving in an orbit as shown in (a), will, after many years, be revolving in an orbit as in (b). This slow rotation of the axis is called the "advance of the perihelion". In the case of Mercury, its perihelion advances at

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the rate of 574 secs. of arc per century. This fact having been established, astronomers set to work to calculate the perturbations on Mercury due to the other planets and accounted for a rate of advance of 532 secs. of arc per century. This leaves a discrepancy of 42 secs. of arc. Following the historical custom established by the discovery of Neptune, a new planet was predicted to account for the difference. Its position was calculated and it was even named as *Vulcan*. However, *Vulcan* has steadfastly refused to be discovered and astronomers have been forced to search for another explanation of the discrepancy. Einstein, using his theory, solved the riddle. The differential equation for the motion of Mercury round the sun, obtained on the basis of the General theory is

$$\frac{d^2u}{d\theta^2} + u = \frac{\alpha}{h^2u^2} + 3\alpha \quad \dots (43)$$

which differs from Newton's by the last term 3α , which is a measure of the motion of perihelion and gives an advance of 41 secs. This is indeed a glowing triumph for the General theory.

(ii) Bending of a Ray of Light:

We have shown in special theory that energy has mass. We should now distinguish between two kinds of mass—*inertial* and *gravitational* mass. We have stated that the mass of a wound-up watch-spring is greater than when unwound. This increase of mass is inertial. But does the spring weigh heavier? Weight involves the gravitational mass of a body. The General theory states that the inertial mass of a body is always the same as its gravitational mass, so that the wound-up watchspring is a little heavier than the unwound spring. Now, a quantum of light has energy $h\nu$, and should therefore have both an inertial and gravitational

mass $h\nu/c^2$. If a quantum passes near the sun, it should, according to the General theory, be bent towards the sun. This suggested an experiment to measure the deviation of a ray of light as it passes the limb of the sun [Fig. 5]. This experi-

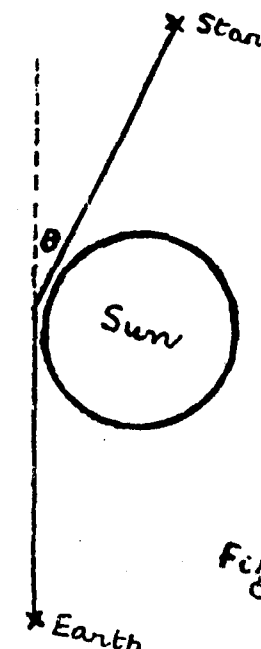


Fig. 5.

ment can be performed only during a total eclipse of the sun, since stars nearly in line with the sun are invisible, as a rule, except at a total eclipse, when the sun is obscured by the moon. Stars which appear just at the edge of the disc of the sun are slightly displaced from their true positions by an angle θ , which, according to the theory, is given by

$$\theta = \frac{4GM}{ac^2} \quad \dots (44)$$

where θ is the deviation in radians, G the gravitational constant, M and a the mass and radius of the sun. Putting in numerical values, θ works out to be 1.75 secs. of arc. Expeditions were organised to observe and photograph the so-called

"Einstein effect" of stars in the neighbourhood of the sun during the total eclipses of 1919, 1922 and later years. The results agreed admirably with Einstein's predictions.

(iii) *Shift of Spectral lines:*

A third prediction of the General theory is that when light moves away from a strong gravitational field, its frequency should be slightly diminished or its wave-length slightly increased due to the work done against the attractive force by the light quantum at the expense of its own energy content. As a result, atomic vibrations on the sun, giving rise to emission or absorption of sun-light, should appear to be slowed down, and the lines observed in the solar spectrum should have a slight shift towards the red, as compared with lines emitted or absorbed by identical elements on earth. This displacement of the solar spectral lines towards the red, called the "Einstein shift", can be readily shown to be given by

$$\frac{d\lambda}{\lambda} = \frac{GM}{ac^2} \quad \dots (45)$$

where $d\lambda$ is the shift for a line of wave length λ , G the gravitational constant, and a the radius of the sun. The expected shift for a line of 5000 Å U. is 0.01 Å U. The experimental confirmation of this is difficult, because of appreciable Doppler effect in the case of the sun. But observations have recently been made on the spectral lines in the light from the Companion of Sirius, a very dense star of large mass and small radius, so that $\frac{M}{a}$ is large. The expected "Red shift" is about 30 times that for the sun. It is easier, therefore, to correct for the Doppler effect, and the observations have confirmed Einstein's theory. The observed shift, corrected for Doppler effect, is found to

be 0.32 Å U. This value interpreted as *relativity* displacement endows the companion of Sirius with the radius of 18,000 kilometres, a value confirmed by other experiments where size measurement is made directly.

Conclusion

The theory of Relativity derives its value not merely from its demonstration that principles and assumptions regarded as absolute are not really so, but also from its comprehension of the laws of classical mechanics within the new framework of its revolutionary concepts.

By a new definition of simultaneity and by the adoption of the principle of the constancy of velocity of light, Einstein has been able to show that the Michelson-Morley experiment and Fresnel's Coefficient can be interpreted in the light of Lorentzian transformations without the intervention of ether. Old anomalies of electrodynamics vanish into thin air. Mass and energy become mere aspects of one and the same entity. One single entity embraces electric and magnetic vectors, and ether bows itself out of the stage of physics. The theory is thus a cleansing of classical mechanics of its absolutist pre-suppositions, and is the designing of a new wholesale scheme.

With a transition from relative translatory to rotatory motion, physical phenomena exert more complicated influence on the measurement of time and on geometrical laws. Einstein's General theory tackles this problem also, and accounts for planetary motion much more adequately than the classical Newtonian law of gravitation. It further enables us to draw conclusions about the structure of the Universe, regarding the state of matter as being something known. Einstein originally speculated that the size of the Uni-

verse was determined by the amount of matter it contained, hence finite, with an implication that, although Space and Time must have equal partnership in determining the laws of elementary constituent fractions of matter, they lose that privilege when they go to form the Universe as a whole. De Sitter, on the other hand, preferring a strictly equal partnership of Space and Time under all conditions, hence even in the case of the cosmos as a whole, conceived a Universe, whose size is not determined *after* the creation of matter actually contained in it, but is capable of accomodating any amount of matter, consistent, however, with the finite nature of the Universe. The more recent conception of an "Expanding Universe" by Friedmann and Lemaitre, partially confirmed by the observed recession at high speed of celestial bodies, as estimated from the displacement of their spectral lines, is a synthesis between Einstein's and De Sitter's cosmogonies, since the Universe, even if it were of Einstein's type at the start, should, being of unstable structure, expand to form the De Sitter's universe at the end.

We easily recognise that the theory includes the treatment of matter, electricity, radiation etc. on the ordinary *macroscopic* scale, perceptible to our senses, leaving the study of the *microscopic* structure in the hands of its equally worthy colleague—the Quantum theory. It is the hope of physicists that the two theories shall meet; and the first contact has already been made by Prof. Dirac in 1923 by his relativistic wave equation of an electron.

The theory of Relativity is, therefore, a marvellous synthesis from the physical point of view. It is a product of genius which perceives the complicated relations of things by intuition rather than by the painful process of experience and verifica-

tion. It has met its reward in the unification, under its vitality and power, of the world of physical phenomena. The theory by its implications and speculations, seems to go even further, transcending the mere material universe and reaching up a higher moral and spiritual plane, giving the right orientation that ought to govern humanity. The relativistic conception of the Universe indeed comes to us as a salutary counsel from the supreme Creator, advising sincerity and humility that are productive of distrust of self and filial confidence in Him. For, in the first place, does not the relative, dependent and finite Universe argue to an Absolute, Independent and Infinite Maker of that Universe? By insisting on the inseparable union of Space, Time and Matter, the Universe becomes a finite picture, whose dimensions are a certain amount of Space—Time continuum, where all matter, human beings included, is like streaks of paint which define the picture against its Space—Time background. Travelling as far back in Time as we can, brings us not to the creator of the picture, but to its edge; the Creator of the Universe lies as much outside it, as the artist is outside the canvas. This enables us to regard the Universe as the result of an omnipotent thought in the mind of the Creator, thus doing away with all the difficulties against a material creation.

Again, the relativity of Time, which forms the basic concept of the theory robs, in a sense, the Past, Present and Future of their significance; the three merge into one and are indistinguishable. We can "re-live" the Past, as vividly as we live in the Present; similarly we can run ahead in the Ocean of Time and see our Future too. Thus we roll along in the stream of Timeless Eternity. We, as tiny specks of paint on the canvas of Space-Time, lose much of our self-assumed

THE MAN IN RAGS

importance, even as absolute time has lost its significance; and both travel down the Ocean of Eternity as insignificant crawlers. This reflexion teaches us to be humble and modest, to acknowledge the Omnipotence of the Eternal Creator, to place all our trust in Him and allow ourselves to be guided by him to the haven of peace and safety,

realising that:

"The Ball no question makes of Ayes
and Noes
But right and left, as strikes the Player,
goes;
And He that tossed thee down into the
Field
He knows about it all—He knows! He

The Man in Rags

(The limitations of human sympathy brought forth in a philosophic way.)

by V. Subramanian

THERE goes the midnight chime. A dreadful silence and a dismal gloom hangs around me. As far as my eyes can reach, there is no vestige of the presence of any human being on the street. My faithful shadow and I are, perhaps, the only two beings loitering alone thus. Nay, yonder a man in rags is busily treading down the street. He is walking very cautiously, hiding himself in the Stygian darkness. Who can he be, and why is he pacing down the street at such a late hour? Well, solitude facilitates my contemplation.

He is now approaching that palatial mansion which is hidden in the dreary darkness. He suddenly turns round and casts a surreptitious glance around. Ah! the pallor of his face frightens me. It seems there never can exist a man in this world with a look more distressing than his. I dare say his face will enlist the sympathies of all those who look at it.

Is he one of those unfortunates who are born to lead the most unhappy lives? Is

he one of those to whom existence is an unalloyed misery? Is he one of those who are "unknown to fortune and fame" and whom "Melancholy has marked for her own"? Is he going towards that gurgling rivulet a mile off, to make an end of his life, and thus to put a stop to his infinite misery?

Or, is he a burglar, busy with his 'nocturnal enterprise'? Possibly he is; for, did he not cast a wary look around him, when he reached that great pile? Is he then intent upon plundering the vast riches stored in heaps in the strongroom of that imposing edifice? If this were the case, why should his face be so pale or, perhaps, I have mistaken the horror of his features for pallor.

Reader, it matters little whether he is an unfortunate wretch or a thoroughbred robber. Whoever he be, it is evident that he suffers and that his sufferings are the result of "chill penury." We therefore feel great commiseration for his miserable lot and we want to do for him all that is



SQUADRON LEADER J. B. COYLE S.J.
R. A. F. Burma

THE INDIAN AIR FORCE

humanly possible. But the next moment we realize with great pain, that we are, after all, human beings and that our powers are not plenary but very limited.

This is the most depressing moment to a human being - this moment when he wants to render assistance to a fellow-be-

ing but finds himself incapable of doing so. He pities the lot of the suffering soul. A well of sympathy and tenderness rises in him. But not being affluent, what can he do? Only stare and blink and gaze and wish he could help - Ah, if wishes were wealth!

The Indian Air Force

by A. T. Devasia, II U. C.

FEW people will realise that flying began in India as early as 1910, not many years after the pioneer flights of Orville and Wright. During the first World War many joined the Indian Air Force and one of them was awarded the D. F. C.

The foundations of the I. A. F. were laid by the famous Government Commission which included amongst its leaders such well-known names in the Indian political field as Motilal Nehru and M. A. Jinnah. On the first of April 1927, the Skeen Committee recommended that an Indian Air Force be formed and that in the early stages its pilots be trained at Cranwell. It was after five years, in 1932, that the I. A. F. became a separate Service Group by an Act of the Legislative Assembly.

On the first of April 1933, the I. A. F. started with a flight at Karachi. It was led by Squadron Leader, Bouchier, and included a number of British non-commissioned officers, since one of the difficulties in connection with the expansion of the I. A. F. then was the supply of technicians.

From the stage of infancy the I. A. F. grew up and a large number of keen young

men came forward to join it. With the commencement of the second World War, it was necessary for the Government to plan for the rapid expansion of the I. A. F. to protect the shores of India as well as internal targets from the aggression of the enemy.

The pre-war strength of the I. A. F. was one Squadron only. Today the I. A. F. consists of scores of thousands of air craft, and hundreds of thousands of men; it possesses some of the finest machines and the finest fliers in the world. It has men: it is inspired: and we now know it has scientific inventions which made its successes appear as miracles to the enemy.

The story of the I. A. F. is the story of its struggle with the Japanese forces. Radar-controlled search light equipments were provided for the I. A. F. for air attacks and shooting down night bombers. It was radio-location that enabled those famous "few" to defeat the Japanese with the deadly accuracy which enabled the I. A. F. bombers to destroy the heart of Japanese industry. The most modern jet-propelled aircraft—Meteor—was also used, a single-seat fighter powered by two Wel-lant and Derwent engines.

Since the fateful year of 1942 when the Japanese hordes swept through Burma, the I. A. F. had been in constant action against the enemy, and it can look back with a sense of pride and satisfaction upon a marvellous record of glorious achievements. At the beginning of the struggle against Japan, our pilots in the face of great odds, out-flew their adversaries. Limited numbers of I. A. F. aircraft performed wonders in the face of enormously superior forces; they did everything humanly possible to harry and stem the Japanese advance in Burma.

Now, the part they are playing in the evacuation of prisoners is inestimable. As soon as the Supreme Allied Commander announced that the Jap forces in the Pacific theatre were honouring the terms of surrender, leaflets announcing the great news and the coming of help were dropped on concentration camps by aircraft flying distances greater than Atlantic crossings. The planes took off loaded with doctors, staff officers, medicine, clothing and food supplies for parachuting to camps. Even special newspapers in English and Indian languages were dropped to camps giving them the news which the Japs denied them. From all over India 50000 Red Cross parcels were assembled for parachute dropping to Indian prisoners of war abroad.

Squadrons of I. A. F. which a few weeks ago were operating against the Japanese in Burma, are now engaged in spraying D. D. T. over some of the worst infested mosquito areas in Northern and Central India. The I. A. F. squadrons engaged on the task will be using Hurricane aircraft. But Liberators, Dakotas and Hurricanes were used for spraying in Burma. Many more planes will be used for civil aviation.

The great expansion of the I. A. F. had been a relentless process, slow in its beginning, but increasing in mass and momentum, as the months became years. This country has an unlimited number of aeroplanes, plus first class institutions where young men are given thorough instruction in the art of flying and for those men who are unable to fly there are schools of instruction where training as Ground Duty Officers is carried out with the utmost efficiency. The present, and probably the permanent, strength of I. A. F. is ten Squadrons. Training in the I. A. F. builds character, it develops qualities of leadership, initiative, self-discipline and courage—qualities essential for success in life. The Airman, in short, acquires that little something extra, which marks him out from his companions. He is a driving force whose unbounded confidence assures him a position of responsibility and trust, whatever his ambitions may be in life.

The End of the World

by S. L. Narayanan

IT is but quite natural that the reader, after perusing this caption should entertain the idea that here-under are discussed some of the latest inventions and their destructive powers. But I assure you, gentle reader, that I am not going to talk about anything of that sort for the simple reason that I am incapable of deciding anything about the future of the world. For one thing the end of the world does not concern students. The Americans might boast that the world could be destroyed with a handful of atom bombs. Others might hold the view that the world would be wiped off by a terrible deluge and so forth. But we, students, are not in the least disturbed by these conflicting views. We take things as they come, and adjust ourselves to our environments. Why say more? I am not going to discuss any great problem of the present day. But herein will be penned an incident, stranger than fiction, stranger than the strangest thing conceivable.

I was travelling by a train, doing 30 m. p. h. Strangely enough there was nobody in my compartment except some mosquitoes which fluttered round the dim light humming a tune of their own. I wondered, looking at these crazy little things, why at all God had created them, when they could be squeezed between the thumb and the forefingers, in the twinkling of an eye. I felt elated at the thought that I held the life of some of them, in my hand. I could annihilate them, if I were so disposed.

When I was thus pondering over their poor fate, the door of my compartment was pushed open and a man entered the train. Evidently the train had stopped.

Or else how could a man enter a moving train? I was so engrossed in deciding the fate of those mosquitoes that I could not distinguish when the train was on the move and when not. The new arrival closed the door firmly and saw to it that the catch was on the hook. This action of the man told me that he was at least a man of common sense.

A porter came running along and handed a suit-case to my fellow-traveller. He placed it in a convenient corner. He plunged his hand into the recesses of his costume, took a five rupee note and gave it to the porter, without the least hesitation. I was perplexed at this action of his. The porter, for whom this was nothing less than a fortune, stood there undecided for a moment and suddenly effected his escape knowing full well that he would be risking his fortune, if he were to let the grass grow under his feet.

Was he a man of common sense after all? Or was he a millionaire who could play ducks and drakes with his money? I smiled at him and expected that he would return the smile, at least for the sake of etiquette. But he never smiled. In fact, he seemed to be a dead man, to all intents and purposes. But for the upward and downward oscillation of his round stomach, there was no sign of life in him.

Putting aside the magazine which contained a brilliant article entitled "Gandhi—through Western eyes", I studied this strange phenomenon opposite me. He had a round head, and his eyes were so short and so flushy that you could almost say that they were round. The round stomach

THE END OF THE WORLD

vied with the round of his head. To crown all, there was on him a round hat and a round wrist watch. He was really a strange specimen of humanity. If that great humorist, Mr. P. G. Wodehouse, were to come across the hero of our story, he would never have hesitated to embark on a new novel captioned, "The mystery of the round man."

"May I know to which place you are going?" I put in. At my question, the man suddenly broke into a guffaw of laughter, his round stomach swaying up and down in the air. I waited patiently and at last came the answer. "To the end of the world."

This information gave me some food for thought. Evidently there was something wrong with the man. For all I knew, he might be a philosopher who was always on the verge of inspiration and insanity. I looked at his face, hoping that I would find some clue to the mystery of this strange creature. But it made matters worse. For he was at that time concentrating his attention on the cover page of my magazine which carried a beautiful picture of Mahatmaji.

"Very beautiful work of art; eh?" Strangely enough the answer came in the form of verse, which complicated matters still more.

"The world is round,
So the train moves round;
Oh! Your face is round.
Your principles, quite sound."

I was really at my wit's end and found it very difficult to pronounce judgement upon the nature or the composition of this round man. I who had so easily pronounced judgement upon the fate of the mosquitoes found myself thoroughly beaten now.

"How do you know that the world is round? Are we to believe all the words of the scientists?" This time his answer made me doubt for a moment whether he was a ventriloquist. For, even while he was answering my question, it seemed to me that he was quoting from some great author. This was his answer? "My conception of scientists as a whole is that they are a set of mad men who look calmly at the burning of great buildings, and pronounce in the end that nothing is lost."

All of a sudden the train halted at a way-side station. A fruit-seller came to our compartment to try her luck. Her hair was fashionably done. It seemed to me to be very strange. And stranger was the behaviour of the man opposite me, who looked at the woman so intensely and directly that I thought of punching him one on the jaw bone. But my friend began again to quote.

"Her hair long and silky was like a raven's wing and her mouth a scarlet harbour to receive the ships of temptation." Hearing this I turned and found the woman disappearing into the crowd.

All on a sudden at the next stop, my friend—I am really ashamed to call him my friend, but he was my fellow-traveller for a few hours and that is something—stood up, took his suit case and my umbrella and made, I believe, for the door. I caught him by the wrist, but my strength was of no avail, for he had the strength of a mad man and he rushed past me and was gone in a minute. He was being followed by a police official, who had mysteriously alighted from the next compartment and I saw them both taking a waiting motor-car outside the station. The train moved very slowly on and I could see faintly—being a suburban station, it

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was not well lighted—the car making for its destination. Yes, to his destination—the end of the world. I could not believe my eyes. Could the end of the world be so near—so appallingly near?

As I was thinking on these lines, I saw the car suddenly stop before a building, adjacent to the railway brilliantly lighted. I adjusted my glasses and tried to decipher the few discernible letters. They were G. L. A. What could they stand for? I put two and two together and the ever puzzling solution of this mysterious round specimen of humanity flashed across my mind, with as much brilliance, if not more

than, as the brilliantly lit building. The letters stood for "Government Lunatic Asylum." And when the train turned slightly in that direction I could very well see all the letters.

That was the end of the world. Or rather that was *his* end of the world. How true it is! Why, in the light of recent inventions and occurrences, who could deny that that was not everyone's end of the world? In their mad pursuit of new destructive weapons, these men of the Atom Age are not a whit saner or wiser than the hero of this episode.

"Democracy in Action"

A Visit to Parliament

by James Lansdale Hodson

I SPENT the other day watching Britain's new House of Commons at work. It is, in some ways, a very different House from the old. The members are a greater cross-section of English life than ever before. And there are more working-class men and women M. P.s than ever before. A Yorkshire friend who studies the House said to me humorously, "It's like Blackpool—crowded, noisy, enthusiastic."

Allowing for hyperbole, there's something in it. Lobbies are crowded with work-folk up from the Provinces to see our Ben or our William; middle-aged buxom women thrust their way—and you discover they are M. P.s; there's a new cafeteria downstairs as up-to-date as a popular teashop; and you light on M. P.s sitting

in corridors at small round tables, struggling to deal with loads of correspondence. You hear letters being dictated as you walk by.

If you sit in the Press Gallery looking down on the Labour benches, you observe many of the same dangling heavy watch chains that are familiar in my native North, and the same drab suits. Only one man wore the traditional black jacket and striped trousers.

Aneurin Bevan, the Welsh Minister of Health, who started life in a coal-pit, had his feet upon the table which holds the mace, and those feet were in brown shoes. George Buchanan, Secretary for Scotland, who sat next to him, has the frizzy quiff

“ DEMOCRACY IN ACTION ”

of hair and the broad Doric tongue that you may find in a Glasgow riveter.

Brogues of Britain

The Provincial feels at home. In a brief space of time, I heard the lilt of Welsh, the harsh burr of Scottish, the tongue of the Newcastle Geordie. Herbert Morrison's clipped Cockney, and the slow speech of Lancashire -- This from diminutive George Tomlinson, who was once a cotton weaver and who is now Minister for works, linked to Mr. Bevan in the task of giving us the millions of houses we want. For myself I count it excellent to hear so many of the various brogues of Britain on that Front Government Bench.

This House is a microcosm of the nation. Being so, much yet remains as it was. Mr. Ernest Bevin, walking in like a human tank; Anthony Eden, debonair as before and laughing as he chats with James Maxton, whose terrific mane of greying hair looks thicker than ever and his face paler; Herbert Morrison, whose own mop of hair and quiff take on touches of grey, and whose tongue can be so brusque and blunt; the Prime Minister, Mr. Attlee, who has grown more assured under his load of responsibility; Mr. Hugh Dalton, the Chancellor of the Exchequer, who has unique gestures and from time to time puts down his hand at arm's length with palm uppermost as if he were disclosing an ace he had up his sleeve; Sir John Anderson, looking like the family lawyer; Ellen Wilkinson still keeping the appearance of a ball of fire; Shinwell, not altogether bereft of the volatile spirit of the stormy petrel even as Minister of the

Crown; Harold MacMillan who once called his own leaders extinct volcanoes, now ready to assail the Socialists.

Infinite Variety

Consider for a moment Question Time alone. On the day I was present, there were 212 questions down for answer by Ministers. The Front Bench is crowded at this time, 2-15 p. m. You learn what Ministers are made of. The Minister reads his reply to the question, but arising out of it there is usually a supplementary question and to this he must reply quick as a knife (if he answers it at all).

This is democracy in action. From the Prime Minister downwards, Ministers are under fire and cross-examination.

The variety of questions is infinite, ranging over the world from somebody's personal grievance to a problem which involves the entire nation.

But of the 212 questions down on my day only about 60 could be answered in the allotted time. The remainder had to be carried forward. This is but one small aspect of the amount of work to be done. Committees begin to sit at 10 a. m. The House assembles at 2-15 and several times lately has sat past midnight. The press of legislation required by new measures of nationalisation, of education, social insurance and the like is mighty.

All the same the new House is a lively and invigorating place. Amid all the gravity (at times) and the hard work, there's a feeling of creation and adventure abroad.

உலகம் அழிக்கப்படுமா?

S. R. கோவிந்தராஜுலு, IV U.C.

போர் நின்றது. சிங்கப்பூர் துறைமுகத் திலே தாய் நாட்டிற்குக் கப்பலேற்றப்பட்டோம். அன்றிரவு, நாடு திரும்பும் ஆனந்தமும், உற்றார் உறவினரைக் காண்பதை நினைக்க உண்டான உள்வக்களிப்பும் எனக்கு நித்திரையிலாது செய்யவே நான் கப்பலின் தளத்திலே ஆகாயத்தை நோக்கியவாறு இனபக் கனவுகள் கண்டுகொண்டு நின்றிருந்தேன்.

என் தோள்மீது கைபோடப்பட்டதை உணர்ந்து திரும்பினேன். ஒரு உருவம் என்னை நோக்கி “நண்பா” என விளித்தது. “யார்?” என வினவினேன். “என்னைத் தெரியவில்லையா?” என்றது. உற்று நோக்கி விழித்தேன். “உன்னால் கொல்லப்பட்ட கடைசி மனிதன் நான்” என்று கூறிற்று. அச்சமென்பதையே இதற்கு முன் அறியாத எனக்கு மயிர்க்கூச்செடுத்தது. என்னையறியாமல் “ஆ” என்று விட்டேன். “அஞ்சாதே! அஞ்சாதே!! நான் ஒன்றும் செய்யேன். உன்னிடம் சிலவார்களை பேசிப் போகலாமெனவந்தேன்” என்றது. நான் பேசாது நின்றேன்.

“ஈ ஏன் போரிடவந்தாய்?” எனக் கேட்டது. “ஏன் போரிட வந்தேனோ? என்ன கேள்வி இது? என்றேன்” “அப்படியா! நான் என்னரசனானையை மறுக்க முடியாது போர்க்களம் வந்தேன். வாழ்க்கையில் பல இலட்சியங்களும், நம்பிக்கைகளும் வைத்திருந்தேன். அவைகள் கைகூடாவண்ணம் செய்து விட்டனயே? என்னை என் மனைவி மக்களிடமிருந்து பிரித்துவிட்டாயல்லவா? இந்நிலையில் நான் எவ்வாறு அவர்களின் சந்ததிகள், மனித உருவில்

அவர்களைக் காண்பேன்?” என்று கூறிப் பெருமூச்செறிந்தது.

பதிலுரைக்க இயலாது நான் திகைத்தேன். “நான் உன்னைக்குறை கூறவில்லை. உன் பகைவனென்று என்னைக் கொன்றாய்? இல்லை! இல்லை!! உன் நாட்டின் அரசாங்கத்திற்கும், எம் நாட்டின் அரசாங்கத்திற்கும் ஏற்பட்ட பகையினால்தான். பொன்னும் பொருளும் கிடைக்கவில்லை எனவும், விற்பனை செய்யவும், கடலில் கலம் செலுத்தவும், மண் எண்ணெய்க் காகவும் அவர்களுக்குப் பகை ஏற்பட்டதாம். என்ன கொடுமை! அதற்காக நாம் ஒருவரையொருவர் கொன்றுகொள்ள வேண்டுமாம். நாம்தான் கொன்றுகொள்ள ஏவப்படுகிறோமென்றால், அந்தோ! அறியாயம்!! ஏதுமறியாத மக்களையும், பெண்டிரையுமாகொழியிய வேண்டும்? இலட்சக்கணக்கான பேர்களைக் கண்ணிமை நேரத்தில் விண்ணுலகனுப்பினரே! கூடாது நேரத்தில் பெரிய நகரம் மண்ணோடுமண்ணாக, நகரின் மாடங்களுக்கும், வீதிகளுக்கும், இருந்த இடம் தெரியாது போயினவே. உயிரிழந்தோரின் உடல்கள் சிறு துண்டுகளாகப் பறந்தனவாமே! அந்நகரின் அண்மையிலிருந்த பலரும் இறந்துபட்டிருப்பின் அவர்க்கு நலமாயிருந்திருக்கும். அங்குறீனர்களாகவும், பல பல நோய்களாலும் எத்துணை துன்பப்படுவார். அணுக்குண்டின் ஒளிக்கிரணங்களைக் கண்டதால் கண்கள் போகவும், அக்கிரணங்கள் உடலில் பாய அதனால் பல வருடகாலம் துன்பப்படுவாரே. அத்துன்பம் அவர்களோடு தொலைந்ததா? அவர்களின் சந்ததிகள், மனித உருவில்

உலகம் அழிக்கப்படுமா?

பிறக்க மாட்டார்களாம். அதிசயப் பிறவிக ளாக, விபரீத உருவங்களுடன் தோன்று வார்களாம். என்ன பயங்கரம்! நீ அத்தகைய உருவங்களைப்போ, பிராணிகளையோ கண்டி- ருக்கமாட்டாய். மக்கட் சாதி மதியிழந்த தின் விளைவாக நடந்தது நடந்துவிட்டது. இனிமேலாகிலும் அவர்களுக்கு நல்லுணர்வு எற்படுமென நினைக்கிறாயா?”

“ஏன் ஏற்படாது. உடனே போர் நின்று விடவில்லையா? அவர்கள் உணர்ந்துவிட்ட னர் என்பதற்கு வேறென்ன அத்தாட்சி வேண்டும்?” என்றேன்.

“நன்றாகச் சொன்னாய்? உணர்ந்து விட்ட வர் அவர்களா? ஒரு நாடு அத்தகைய சக்தி படைத்து விட்டது என்று மற்ற நாடுகளும், — தங்கள் தற்காப்புக்காகவா, இல்லை, எதிரிகள் மீது ஏவ — தாழும் அச் சக்தியைக் கண்டுபிடிக்கத் துடித்துக்கொண் டிருக்கின்றனவே. இதோ கண்டு பிடித்து விட் டோம், அதோ கண்டு பிடித்து விட்டோம் எனப் பறைசாற்றுகின்றனவே!”

“கேவலம் பொன்னும், பொருளும், எண்ணெயும் அவர்களை என்னபாடு படுத்து கின்றன. அற்பமானவற்றிற்கு என்னென்ன ஆட்டமிடுகிறார்கள். முதன் முதல் பொன் னைப் போற்றிய கயவன் எவனோ? அவனு லல்லவா மக்களினத்திற்கு இக்கேடு வந் தது.”

தங்கத்திடம் கொண்ட வாதல் தகாதது செய்யத் தூண்டுகிறது. ஆசை அவர்களை ஆட்டிவைக்கிறது. இன்பத்தை நாட நினைந்து தன்பத்தை அடைகின்றனரோ. இப் பொழுதாவது நகைமட்டிலும் அழிக்கும் திறனைப் பெற்றனர். இனி நாடனைத்தும் கணத்திலழிக்கும் திறன் படைத்த கரு

வியை சமைப்பர். தங்கள் திறமையை எண்ணி வியப்பர். இறுமாப்பர். என்ன நேரு மென்பதை அறியாது சக்தி ஷுட்டைகளை அவிழ்த்துவிட அது அவர்களின் எதிரிகளை மட்டுமா அவர்களையும் உடனே சேர்த்துக் கொல்லும். சக்திகளைக் கையாண்டு, அவற்றை அடக்க முடியாது தனிப்பர். இவ்வுலகின் ஆதிகாலம் தொட்டு சேமித்து வைக் கப்பட்ட அரிய அறிவுப் பொக்கிஷங்கள், சிற்பங்கள், சித்திரங்கள், கண்ணுக்கினியன எல்லாம் அழியும். உலக முழுதிற்கும் அவர் கள் தீழ்மட்டி விடுவர். அப்பொழுது உலகத்தி லுள்ள உயிர்களைத்தும் அழிந்தாலும் அழிந்துவிடும். கடல் நீரிலும் விடம் கலந்து விட்டாலும் விடுவர். ஆகாயம் சுவாசிக்க இயலாதவாறு புகையாக மாறினும் மாறும்!!

“என்ன அவ்வளவுதூரம் செய்யும் அறி வின்ம் ஏற்படுமா?” எனக் கேட்டேன்.

“நீ அறிந்தாயில்லை. மக்கட்கு அத்தியா வசியமெனப் போதிக்கப்படுவது என்ன தெரியுமா? அன்பையும், ஆத்மாவையும், முழு முதல்வனையும்பற்றியல்ல. அவர்கள் விரும்பிப் படிப்பது என்ன தெரியுமா? விஞ்ஞானமும், சண்டைக்கு மூலகாரணமான பொருளைப்பற்றின பொருளாதாரமும். அரசியல் ஞானிகள் படிப்பது வேதாந்தமா? இல்லை! இல்லை!! அரசியல் தலைவர்களின் அடிமைகள் விஞ்ஞானிகள். அவர்கள் ஏவ இவர்கள் அடக்க முடியாத சக்திகளைத் தோற்று விப்பர். அவை போதாவா உலகை அழிக்க.”

“தன் கடமையை மனிதன் மறந்துவிடுகிறான். தான் படைக்கப்பட்ட தன் காரணத்தை உணர்கிறானில்லை. அறவினையை அடியோடு மறந்து விடுகிறான். அதை விட்டுத் தகாத

நிரந்தர சமாதானம்

காரியங்களில் தலையிடுகிறானே! உலகம் உய்ய வழியுண்டா? நீ உரை” என்றது.

“ஆனால் நீ கவலை கொள்ளாதே. உனக்குப் பின்தான் உலகமழியும். அவ்வளவு விரைவில் உலகை அழிக்கும் சக்திகள் அவர்கட்குத் தோன்றாது” எனக்கூறி மறைந்தது.

நிரந்தர சமாதானம்

தா. அ. ஜெயசீலன்

முதல் மகா யுத்தத்தின் இறுதியில் சமாதானம் கோரப்பட்டது. சமாதானத்தின் அறிகுறியாக சர்வதேச சங்கம் என்ற ஸ்தாபனம் வில்ஸன் எனும் அமெரிக்கத் தலைவரால் ஜிளோவா நகரத்தில் ஸ்தாபிக்கப்பட்டது. அச் சங்கத்தில் பதினான்கு திட்டங்கள் வகுத் தார்கள். உலகப் பாதுகாப்பும், நிரந்தர அமைதியும் சமாதானமும் நிலவுவதற்காக வென்று அமைக்கப்பட்ட இச் சங்கம் தனது அலுவலைச் சரிவரச் செய்ய வாய்ப்பில்லாது போயிற்று. இதன் விளைவு 1939—45 வரை உலக மக்களைப் பாதித்த இரண்டாவது உலக மகாயுத்தம் என்னலாம்

இன்று உலக மக்கள் சென்ற கொடும் போரின் விளைவுகளைக் காண்கின்றார்கள். அடிப் படையிலேயே அபிப்பிராய பேதங்களும் கொண்ட சான்பிரான்ஸிஸ்கோ மகா நாட்டை உலகம் கூட்டிற்று; அந்தப் பிரிஸ்கோ மகா நாட்டில், ஆள் விழுங்கி அரசாங்கங்களும், ஜனநாயக நாடுகளும், பொதுவுடைமைத் தேயங் களும், அடிமை நாடுகளும் ஒன்று கூடி, வருங் கால உலகில் நிரந்தர சமாதானம் நிலவுவதற் கான வழிகளை ஆராய்ந்தன. பிரிட்டன் தனது சாம்ராஜ்யக் கொள்கைகளை நிலை நாட்டவும், அமெரிக்கா தனது அயல் நாட்டு வியாபார உரிமைகளை ஸ்தாபிக்கவும், ருஷியா தனது

“என்னுடனழிந்தாலென்ன? எனக்குப் பின் அழிந்தாலென்ன” எனச்சொல்லிவிட்டு உலகம் அழிக்கப்பட்டு விடுமா? என என்னுள் சிந்தித்தேன். என் சிற்றறிவிற்கு ஒரு முடிவும் எட்டவில்லை.

போஸ்ப பொதுவுடைமைக் கொள்கைகளை ஸ்தாபிக்கவுமே, மற்ற இதர நாடுகளை அறை கூவி, இந்தப் பிரிஸ்கோ மகா நாட்டிற்கு அழைத்தது என்பது உண்மையானால் அதன் முடிவும் அத்தனை திருப்திகரமானதல்ல என்று கொள்வதில் வியப்பில்லை. பிறகு முப் பிரதி நிதிகள் மகாநாடு லண்டனிலும் மாஸ் கோவிலும் கூட்டப்பட்டது. அங்கும் படுதோல்விதான். காரணமென்? ஒவ்வொரு வல்லரசும் தன் தன் உரிமைகளையும், கொள்கைகளையும் பாதுகாக்க விழைந்ததே பொழிய, உலக சமாதானம், சிறு நாடுகளின் தனி உரிமை, அடிமை நாடுகளின் சுதந்திரம், முடிவாகத் தனி மனிதனின் உரிமைகள் சிறப்பாகப் பேசப்படவில்லை என்றே கொள்ள வேண்டும் அவ்வாறு இவை பேசப்பட்டாலும் வெறும் பேச்சளவிலேயே நின்ற தொழிய, நடமுறையில் சாதிக்க மார்க்கமில்லை.

உலகம் பலதேயங்களைக்கொண்டது. தேசம் மக்களைக் கொண்டது. மக்களுக்குச் சுதந்திரம் வழங்குவதால் தேசம் சுதந்திர மடைகின்றது. தேச சுதந்திரத்தால் உலக சுதந்திரம் உண்டாகின்றது; அஃதால் நிரந்தர சமாதானம் உண்டாகின்றது. எங்கெங்கு சிறு தேசங் களின் உரிமைகளும், சுதந்திரமும் பறிக்கப் பட்டு ஆக்ரமிப்பும், அடக்கு முறையும்

இளந்தமிழன் இதயம்

தாண்டவ மாடுகின்றதோ அங்கு சுதந்திரம், நிரந்தர அமைதி ஏற்படுவது இயற்கைக்கு விரோதம். இத்தகைய கொள்கையில்லா மகா நாடோ, சர்வதேச சங்கமோ உலக சமாதானத்தைப் பாதுகாக்க முடியாது; அப்போது நிரந்தர சமாதானம் குதிரைக் கொம்பாகி விடும்.

தனி நாட்டின் சுதந்திரத்தைக்கொண்டே சமாதானம் ஏற்படுமென்பது யாது காரணம் பற்றியென வினாவெழலாம். கடவுட் படைப்பில், இயற்கையின் நியதியில் மனிதன் சுதந்திரப் பிரியனாகவே பிறக்கின்றான். சுதந்திரம் அவனது பிறப்புரிமை. பிறப்புரிமையைப் பறிப்பது இயற்கையைக் கெடுத்தது போலாம். இயற்கை வேறுபடின என்னும்? கடல், வானம், சந்திரன், சூரியன் இயற்கையின் ஆணையோடு

இயைந்து நடப்பதால் இன்று உலகம் நடக்கின்றது. அவ்வாண்களை மீறின், கடல் தன் நிலை குலைந்து பூமியில் சென்று அழிவை உண்டாக்கும்; இயற்கையின் அமைதி அழிக்கப்படுகின்றது; ஜலப்பிரலயம் ஏற்படுகின்றது; உலகம் அழிவுறுகின்றது. அத்தே போல், மனிதனின் பிறப்புரிமையாகிய சுதந்திரம் பறிக்கப்படுங்காலை இயற்கையின் நியதிக்குப் பங்கம் ஏற்படுகின்றது. அக்காப் போரும், அழிவும் உலகில் தோன்றுகின்றன.

இயற்கையோடியைந்த வாழ்வு, தனி மனிதனின் பிறப்புரிமைகள், சிறு நாடுகளின் சுதந்திரம், சர்வதேச ஐக்கிய இவை ஏற்பட்டால் தான் உலகம் நிரந்தர சமாதானத்தை அடைப முடியும்.

இளந்தமிழன் இதயம்

ம. க. சேளந்திர பாண்டியன், II U. C.

இன்றைய தமிழன், மிக இழி நிலையில் இருக்கிறான். அவன் தன் வலிமையை இன்னும் உணர்வில்லை. தமிழனின் பெருமை தன்னிகரற்றது. சரித்திர காலத்திற்குமுன்பே, தமிழன் தலைசிறந்தவனாய் விளங்கினான் என்பது ஆராய்ச்சியாளரின் முடிவு. தற்காலம் இது பாகங்களில் வாழும் மக்கள் தோன்றுதற்கு முன்னமே—அவர்கள் ஆடையின்றிக் காடுகளில் விலங்கினங்கள்போல் அலைந்து திரிந்த காலத்திலும்—தமிழன் கலைஞனாகியும் நாகரிகத்திலும் போர்த்திறமையிலும் உன்னத நிலையில் வாழ்ந்து, வந்தான். சரித்திரகாலத்திற்கு முன்பிருந்தே அவன் இப்பாரினில் தனிப்பெரும் அரசாட்சிசெய்தான். அவனது மொழி தொன்மைவாய்ந்தது. நாகரிகம் நிகரற்றது; வாணிபமும் கைத்தொழிலும் வையகம் முழுவதிலும் பரவியிருந்தன. ஆழ் கடலில் கலங்களைச் செலுத்தி வேற்று நாட்டின்

மீது படையெடுத்துச் சென்று எதிரிகளைப் போரில் மடக்கி அடக்கி ஒடுக்கிய பண்டைத் தமிழனின் நிலையை நினைக்குங்கால், இற்றைத் தமிழன் செருக்குறமல் இருக்கமுடியாது.

உலகில் வீழ்ந்த சமூகங்கள் யாவும் தம் பண்டைய பெருமையிலிருந்தே பெரும்பலம் தாட்டிக்கொள்கின்றன; நன்கு வாழ்ந்த தங்கள் பண்டைய சமூகத்தை நினைந்து வீறிட்டு முத்து நிற்கின்றன. ஆனால் இற்றைய தமிழர் சமூகமோ உன்னித்தானி ஏழ முயற்சிக் காது, பெரும் துயிலில் ஆழ்ந்துகிடக்கின்றது.

பண்டைத்தமிழன் 'ஒன்றே குலமும் ஒரு வனே தேவனும்' என்ற கொள்கைக்கு ஒப்பிவாழ்ந்தான். ஆனால் இன்றோ ஜாத வேறுபாடு, தீண்டாமை முதலிய கடுவிலங்குகளோடு போராடி நிற்கின்றான்.

இளந்தமிழன் இதயம்

பண்டைத்தமிழன் காதலையும் வீரத்தையும் உயர்வாய் மதித்தவன். தமிழன் போர்புரிவதில் எந்நாட்டினருக்கும் சளைத்தவன் அல்லன். காதுக்குக் கலித்தொகை. வீரத்திற்குப் புறநானூறுபோன்ற அவனது இலக்கியங்களே சான்றாகும்.

அன்று வடவேந்தன் பாலகுமாரன் என்பவன் மக்களாகிய கனகனும் விசயனும், விருந்தொன்றில் தமிழனின் ஆற்றலை இகழ்ந்துகூற, அதைச் செவிமடுத்த சோன் செங்குட்டுவன், அவ்விழிமொழி நீங்கும்பொருட்டுப் படைபுடன் சென்று அவ்வடவேந்தனைச் சமரில் பணியச் செய்து அவர்கள் தலையில் பத்தினிப் பெண் கண்ணகியின் சிலைக்குக் கல் கொணரச் செய்தான்.

முதலாம் இராச இராசேந்திரன், வடவேந்தர்களைப் போரில்வென்று கங்கை நீர் நிரம்பிய குடங்களை அவர்கள் தலையில் ஏற்றிவாச் செய்து, இந்நாட்டிலுள்ள பெரிய ஏரி ஒன்றில் அக்கங்கை நீரை ஊற்றச்செய்தான். தான் வடவேந்தர்களை அடக்கியதின் அடையாளமாக அதற்கு 'சோழகங்கம்' என்னும் மகுடம் சூட்டினான். சோழனுக்குக் 'கங்கை கொண்ட சோழன்' என்னும் விருதும் கொடுக்கப்பட்டிருக்கின்றது.

பண்டைத்தமிழன் இமயம்வரைப் படையெடுத்துச் சென்று தமிழக்கொடியைப் பறக்க விட்டான். வடவரும் ஏனையரும் அஞ்சிப் பணிந்தனர். ஆனால் அன்று இமயத்தில் பறந்த தமிழக்கொடி, இன்று நம் நாட்டிலும் பறக்கக் காண்கிலோம்; அன்று கிரேக்க எகிப்திய, ரோம நாடுகளுக்கு அகில், சந்தணம், மயிற் பீலி மிளகு, தந்தம் முதலியன அனுப்பி அதற்கு ஈடாகப் பொன்னும் மணியும் பிறவும் பெற்ற நாம் இன்று அந்நிலை இழந்து நிற்கின்றோம். ஜாவா, சமத்திரா, இலங்கை முதலிய தீவுகளைத் தன் கீழ்வைத்திருந்தான். ஆனால் இன்று அங்கு அனாதையாய் ஆடுமாடுகளைப் போல் உழைக்கும் கூலியாகப் போகின்றான்.

பண்டைத்தமிழ்க் கலங்கள், கிரீசு, இத்தாலி, எகிப்து, பாபிலோனியா முதலிய நாடுகளின் துறைமுகங்களில் மொபத்துக் கொண்டிருந்தன. ஆனால் அக்கலங்கள் இன்று நம் துறைமுகங்களில் கூட நிற்கக்காணோம், என்ன கொடுமை!

பண்டைத்தமிழன், தமிழ்க் கொடியில் பொறித்துள்ள சின்னங்களை நோக்குங்கள். சேர, சோழபாண்டிய மன்னர்கள் தங்கள் கொடியில் முறையே வில், புலி, மீன் இவைகளைப் பொறித்துள்ளார்கள். ஆகாயத்தில் வில்லின் அம்பு தங்குதடையின்றி எவ்விதம் செல்லுகிறதோ, அவ்விதம் ஆகாயப்படைவைத்திருந்திருக்கின்றார்கள். தரைப் படைக்குப் புலிப்பலம் வேண்டும். புலியைப் போலப் பதுங்கிப் பதுங்கிப் பாயவேண்டும். அத்தகைய படை என்னிடமுள்ளது என்று கூறுவதுபோல, சோழன் தன் கொடியில் புலியின் சின்னத்தைப் பொறித்திருந்தான். கடற்படை சமுத்திரத்தில் மீனைப்போல் நிலவ வேண்டும். மீனைப்போல் 'பனிச் பனிச்' சென்று கடலில் ஊடுருவிப் பாயவேண்டும். ஆகவே பாண்டியன் மீனின் சின்னத்தைத், தன் கொடியில் பொறித்திருந்தான். இக்கொடியே, பண்டைக்காலத் தமிழகம், மாபெரும் வல்லரசாகத்திகழ்ந்தது என்பதற்கு போதிய சான்றாகும்.

நெற்றிக்கண்ணைக் காட்டினும், நீ சாற்றிய பாகுற்றமுடைத்தே எனப் பொருத்தமுடன் வாதிட்ட நக்கீரன் வழித்தோன்றிய, நந்தமிழ் நாட்டு இளைஞர்கள்! வருங்கால உலகை அமைப்பவர் நாமே. இளைஞர் உள்ளம் சோர்வின்றி உழைத்தலும், இடுக்கண் இடர்களைக் களைந்தெறித்தலும் வீரச்செயல் புரிதலும், வெற்றிபெரும்வரையில் கிடாமுயற்சியுடன் முன்னேறிச்செல்வதும் இளைஞரின் தன்மை. வருங்காலத் தமிழ்நாடு கலங்குதல், கலங்குகளஞ்சியம், நாகரிகத்தின் சகாப்தம், எப்போற்றும்படி வாழ்வுகளைச் செய்வது கட்டளை.

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காவிரி தந்த காட்சி—இராம. வே. இராமச்சந்திரன், நான்காம் வகுப்பு

மாவின் பூக்கள் மலர்ந்து விரியும்
மாகித் திங்கள் மலர்ந்த சமயம்
மாலே வேலை மலரும் பூக்கள்
வரிவண் நேத வாய்கள் அவிழ
அமைதி மனதில் அற்று அன்று
ஆற்றங் கரையில் அடிமேல் அடியாய்
நெடிதே இட்டு நெடுக நடந்தேன்.
இன்பக் காட்சி என்னை என்னை!
சொல்லுந் தாமோ? சுற்றும் பார்க்க
மாங்கட் செறிவின் மாட்சி மிக்க
சிரங்கொன் உயிரும் செப்பல் அரிதே!
ஒங்கி வளர்ந்து உயர்ந்து நீண்ட
தெங்கின் அழகின் சிறுமைப் படுமோ?
நீயோ வளைந்து நெளிந்து ஓடும்
ஆற்றைப் போல அழகாய் இல்லை.
நானோ நிமிர்ந்து நன்றாய் நின்று
பார்க்க மிகவே பண்பு பூண்டு
நோக்கு கின்றேன்' என்றே கூறும்
பாக்கு மாத்தின் பகட்டும் நோக்கி
உள்ளம் மிக்க உவகை கொள்ள;
காற்று சுற்றே கடிந்து ஊத
மாரி நாளில் மகிழும் மஞ்ஞைத்
தோகை என்றே தோன்றும் வண்ண
மூங்கிற் புதரே முனைந்து ஆட

இயைந்து நின்று இன்பங் கண்டேன்.

இன்பத் தோற்றம் — D. A. சுந்தரராஜ் I U. C.

பூவின் மணஞ்செய் காவின் கவினெடு
வாவியின் தண்டடம் பாவிடுந் தென்றலைத்
கண்டுங் காணு விண்ட மனத்தனுய்ச்
சுற்றிய போழ்து பற்றிய தீம்பகி
கெடுத்தற் கியலான் கிளையளி நிழலில்
படுத்தேன் நன்னீர் மடுத்த பின்பை
உலவிய தென்றல் குலவிய போதை
நறுமண மெற்று வருமள வினல்லால்
இன்ப மூக்கிடும் இன்னிசைப் பண்ணை
எந்தி வந்து சேர்ந்தவென் செவியிடை
மாந்தத் தந்து போயது கண்டேன்

மலரின் கண்ணை மதுவை உண்டு
வெறிகொள் சுழம்பு நாதம் பாட
வானை நோக்கி வளர்ந்து விரிந்த
தேக்கந் தருவின் கிளையது ஒன்றில்
பெட்டை ஒன்றே பிணங்கி ஊட
ஆற்றில் நீரும் அறவே வற்றி
ஊற்று நீரோர் ஓரத் தோடக்
கரையை விடுத்துக் காவிரி தன்னில்
தெளிந்து ஓடும் தெண்ணீர் மாந்தி
மருங்கு படிந்த மணலாம் திடரில்
இருக்க நானும் என்றன் எண்ணம்
“பூவார் சோலை மயில்கள் ஆடப்
புரிந்து குயில்கள் இசையும் பாடக்
காமர் மாலே அருகே அசைய
நடந்தாய் வாழி” என்றும் பிறவும்
காவிரி தன்னைக் கணிந்து பாடிப்
பூவிரி புகழைப் புனைந்து கொண்ட
சேரர் கோவின் இளங்கோ அடிகள்
பெருமை எண்ணிப் பெரிதும் போற்றி,
இயற்கை இன்பம் என்னை இன்பம்
மக்கள் வாழ்வு இயற்கை இன்றேல்
மாசு படிந்து மடிந்தே போகும்
என்றே உன்ன என்றன் சோகம்
எல்லாம் அற்று இயற்கை அழகில்

பிள்ளை வாய்மொழிக் கிள்ளை மொழியுஞ்
சொல்லாற் குயில்கள் நல்லா னந்தங்
கொண்டு பாடுங் குரலிசை யதுவோ?
வண்டெண் டிதே னுண்டு வார்த்தும்
நாதந் தானோ; ஏதோ? வறியேன்
காணும் பொருளெலாங் களிப்புடனிருக்க
நானவில் காரணம் நிமிர்ந்து நோக்கலும்
துங்கமில் லாதொளிர் செங்கதிர்ப் பரிதி
மேற்றிசை வானில் வீற்று விளங்கி
செந்தண் கதிவை இரந்தென் றையுற
இறைத்தல் கண்டேன் வருத்த மொழிந்தேன்

“ஆசான் வாக்கு”—N. சுவாமிநாதன் IV. U. C.

படியெனப் படித்தல் பழியன் ததனெதிர்
படியே நென்றல் அதனினும் பழியன் து;
கொள்ளென வுரைத்தவை கொள்ள
கொண்டவை போற்றல் அதனினு
விண்ணிறை மீனென எண்ணிறை வோருளும்
உளஞ்செல வுரைக்கும் உரவோர் சிலரோ;
கிணற்றுற் றன்னவர் உணர்த்துமொழி
குணக்குன் றேறும் நலத்தவர் மிகச்சிலர்;
பரிட்சைக்கு வருமெனப் பலபட வுரைத்தும்

குறித்தவை கொண்டோர் சிலராயினோ;
உரைக்கப் படும்பொரு ளுளங்கொள
வொழித்து
விடுக்கப் படும்பொருள் விழைந்து
கொண்டோ;
இத்தகை தும்செயற் கிரங்கி யென்னுளும்
சுற்றுமோர் காலச் சமுலினை யன்றிப்
பற்றிநான் உங்களைப் பழியலேன் ஆதலின்
உள்ளம் நிறைந்த உரையினை
எள்ளினு மென்னென் இரங்கு செயல்
கண்டே.

நான் கண்ட கனவு—அ. நடராசன் II U. C.

கைப்பிடி மீறும் கதிர்தன் கொண்ட
வைகளைப் பொழுது வளைந்தெழு நெற்றான்
வாரீர் தமிழோ, வையத் தாங்கு
சேரீர் ஒன்றாய் செந்நெல் மணிபோல்!
இன்றே ஒன்றி எழுவிர் என்று,
நின்ற என்னின் நினைவில் நின்ற
அழுத்த புலங்களைப் பார்த்தே நோர்புறம்;
மன்னவ ளவர்தம் மெளலியி லாடும்
அன்னச் சிறகுபோ லழகாய் வளையும்
நெடுமீழ்க் களைமேல் நகையாய்க் கொண்ட
நரும்புக் கட்டம் காணும் ஓர்புறம்;
பகலவன் கதிரால், பாய்ந்து ஓடும்
அகல ஆற்றின் ஆழமும் சுட்டது.
பாண விடுப்பில் படாது பிழைத்த

சுனைதனை நாடும் சுருள்கோது கலைபோல்
கானலை விடுத்துக் கடுகினென் மாநிழல்;
கன்னம் சிவந்த குழுவியின் இதழைக்
களிப்புடன் கவவும் காரிகை போல
இளநீர் பொத்து இறுக உறிஞ்சினென்,
அடைந்தேன் இன்பம்; அயர்வு நீங்க
படரும் நிழலில் படுக்க லானென்;
எங்கோ யிருந்து என்னிரு செவியில்
மங்கிய ஒலியில் மணி தமிழ்ப் பாட்டு
ஒலித்தது, என்னை! யாழின் மூலம்!!
சிலிர்ப்போ டெழுந்து சென்று கண்டேன்!
முற்றிய வெண்ணடைய முழுதும் பிளக்கச்
சொரியும் விரைபோல் சொரிந்தாள் சிரிப்பை
விழித்தேன் திடுக்கென, வியர்த்தேன் பின்னர்!

Chronicle of Sacred Heart Hostel & Boarding

June 22nd 1945.—Our beloved Trichy rejoices at the re-opening of the College after a long and monotonous lapse of three months. The shops, hotels, laundries, even jutkas pool their strength to cope with the demand.

On entrance one finds the entire order changed giving place to new, Rev. Fr. Pinto in the place of kind and loving Fr. Leguen; Rev. Fr. Audrain minister replaced by Rev. Fr. Santiago. Though no change in our Warden, his capital for the third time in history has been shifted.

23rd.—No corner is left without a box or bedding; problem of "no room" both in the college and hostel being faced with long faces!

24th.—Life at home settles down. Warden's hand-claps and search-light begin to function again...

25th.—The Prime Minister forms his new ministry (cabinet): Mr. K. C. Pylee, deputy Prime Minister.

27th.—The Inaugural Address of the Catholic Truth Association is delivered by Fr. Carty. He explains his new scheme of the Catholic Students' Union with a fourfold purpose.

30th.—Gossiping grows like wild fire. Some say—No, man, it can't be. Vice-principal? Not surely. He is having enough of us here.

July 1st.—And yet there is our G. P. as V. P. truly enough.

CAUTION.—Beware, proxy-mongers!

15th.—Corpus Christi Procession—an unparalleled success.

18th.—Plaza in full—Song of Bernadette!

20th.—Mosquito menace—a regular and ruthless invasion. Will the Hostel Municipality and R. M. O. look into the matter?

23rd.—Cabinet meets. Though the idea of an entertainment committee is thrice conceived by our Warden it has brought forth nothing-except of course, Salette and Co. All honour to them.

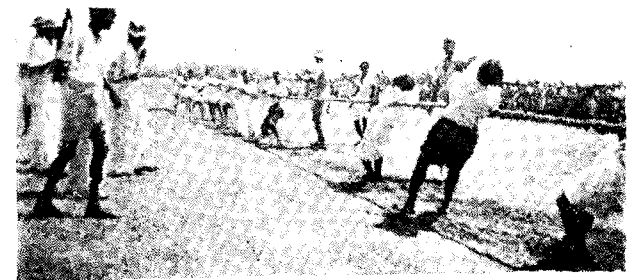
29th.—Fr. Sama, S.J. gives a talk in the Lawley Hall on Catholic Action and Students' part in it. What sincerity and enthusiasm! "Come, let us go to the front".....

30th.—Feast of St. Ignatius of Loyola. A grand academy got up in his honour, Rev. Fr. Rector presiding. The Jap Dance was really marvellous. A tough fight between music and ventriloquism. Rev. Fr. Rector's presidential address is also the inaugural of the Hostel "L & D."

August 15th.—News of Jap surrender: our thanks for the two holidays we were given in commemoration. In the hostel and boarding-house general permission to play the fool in honour of this termination. Very fine, all—but for the "playing the fool" which was carried out literally—a little too literally!

19th.—Sensational trial of Hitler in the S. H. Hostel Union. Magnificent eloquence of the Defence. Hitler is acquitted.

23rd.—A grand picnic to Srirangam. Who squatted next the Principal for the noon-day-meal?



TUG-O'-WAR

NEW HOSTEL A & B
(K. S. Mangalochu II U.C.)



(V. Venkatramani II U. C.)



STAFF RACE

(V. Venkatramani II U. C.)

CHRONICLE OF SACRED HEART HOSTEL & BOARDING

Retreat begins very solemnly. Rev. Fr. Froehly, the preacher, every one feels—can't speak, you see—is master of his art. No wonder. He is a son and a worthy son of the great master of Manresa.

Sept. 9th—A warm compliment is paid by our Warden to the veteran musicians who take delight in displaying their talents in forbidden places. "We are prepared," he said, "to suffer your music if you exhibit it in public for the good of all." Here, musicians, here is a chance!

27th.—After a short spell of inactivity life revives in the House.

Oct. 12th—September results are out; long and gloomy faces all over the place. The fellows have let slip my number! Never mind, remember failures are stepping stones to success.

14th.—A day of intense activity—Election Campaign. Speeches and polling for the Speaker of the Hostel L & D—a sample of typical polling. Mr. S. Vincent carries the day.

15th.—Warden comes with the "Mark List." Remarks and tribute range from 'very bad indeed' to 'not bad at all' . . and ends with a severe warning to and against "butterflies."

19th.—Rector's Day. Greeting and grand felicitations. Great enthusiasm and energy characterise the day. The generous general amnesty acclaimed by many but . . . How does Fr. Principal re-act?

20th.—College Day—our famous sportsmen get ready; the gallant U.O.T.C. file into their work. Stanley to Pushparaj need physical support to stand the prizes. Evening crowned with a grand function.

21st.—Mission Sunday. Interesting talk in the Assembly Hall by the Rev. Fr. Rayanna, S.J.

24th.—Day of Promise—Annual Pilgrimage to the Holy Redeemer's Church.

Nov. 3rd—To break the monotony of four long days our Warden is pleased to arrange a small function and social in honour of Rev. Fr. Rector. How we wish to have many more socials of this kind! Satan descends upon the stage to take part in the Fancy Dress competition, but Judas has bought off the prize with the notorious silver coins.

11th & 12th.—Newman Centenary Celebration—a miniature show of the college Centenary; crowning success, because Fr. Carty is interested.

Dec. 3rd—A break—what a brake! The Feast of St. Francis Xavier—a feast which counts more than most others. It is the Warden's Feast. Rev. Fr. Principal and Rev. Fr. Froehly, our Spiritual Father also have the Saint's name. What a combination! The outburst of festal greeting resounds during the meeting to greet them.

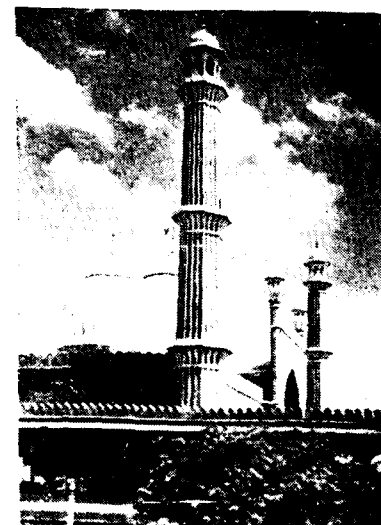
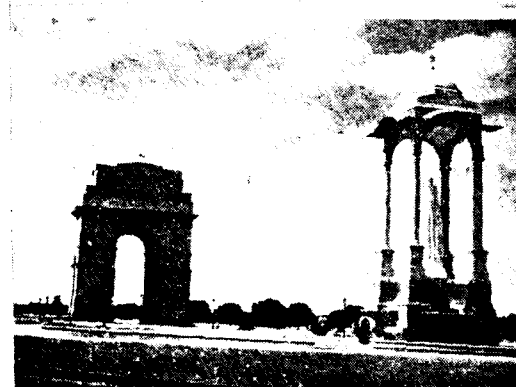
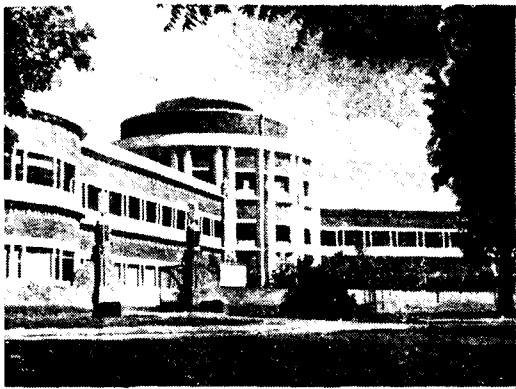
Jan. 3rd—Beginning of another term—and of sighs, one fears, for fear of examination in the heat of the coming months.

8th.—Our Father Rector returns from hospital after his treatment. All thanks to God. A warm welcome...ad multos annos.

12, 13 & 14th.—Three days engaged in the spectacular Catholic conference at Trichy. Our Volunteer corps functions splendidly and establishes the name secured during the Centenary last year.

19th.—His Excellency the Rt. Rev. Dr. Roche, S.J. gives an eloquent speech and winds it up with an appeal for increased vocation from the College.

20th.—The G. P. stalks in with the Domesday Book: "We are confronted



1. The Broadcasting House, New Delhi
(S. Sethurethnam IV Hons.)
2. The Secretariat, New Delhi „
3. The Fort, New Delhi „
4. The War Memorial, New Delhi „
5.(Sri Sankar)
6. The Jumma Masjid, New Delhi
(S. Sethurethnam IV Hons.)

CLIVE'S NEWS PARADE

with problems more intricate than those faced by the U.N.O." Oh? These problems are food problem, electricity, health, study and the rest. No fear as long you are there! This time his remarks, thanks to the marks, show a departure from the usual ones.

25th.—A birth in the Inter Division... it is only the Marian Review of the Soda-lists. Long live little one.

Feb. 2nd.—All Catholic Students' Day. Our Warden in the capacity of the judge awards prizes to all the competitors in the Indian Music Contest. What a good Judge, a Daniel!

Clive's News Parade

THE seductive call of Lord Clive creeps into the ears of Josephites scattered in the various parts of the province and drags them all towards the concentrated camp at the foot of the Rock Fort along with the new recruits on the 22nd day of June 1945, the very day on which the clarion call of Lord Wavell summons the Indian National leaders to the dizzy heights of Simla.

The new year brings with it new men, new games, new principles and Clive's finds newness in everything. The tri-cameral state is converted into a bi-cameral one with the abolition of the Malabar Section. Fr. Warden also becomes the Prefect of Clive's Boarding-house. Clive's turns into a semi-modern institution with the introduction of indoor games. But it does not lose its antique charm, conservative spirit and youthful enthusiasm.

The Variety Entertainment surpasses all those of past years and is said to be the best of its kind—sic Fr. Rector, the President. Thanks to all, particularly to Fr. Miranda and Fr. Diaz and the gifted stage manager, Fr. M. C. Joseph, and Fr. G. P. above all certainly.

We feel the lack of one, all the same—of our enthusiastic and good Br. Ignatius. But we understand he is gone for his final vows in the Society and will be back in the course of the day. How refreshed and strengthened he must be feeling!

11th.—The majestic Car Procession taken out round the streets of Teppakulam was wonderful and inspiring beyond all words.

June 28th. Our first family meeting is held and our warden welcomes all of us and preaches his gospel of 'work'.

July 1st. The month of July brings with it the bosses of Clive's for the current year.

July 11th. 'Restoration of human values' restores the life of the Clive's Union. 'Unity, thought and good will' are pumped in by Prof. Sarma in the vacuum created last year.

July 16th. The Quadrangle comes again to remind us of our 'work'.

July 18th. Clive's parliament which is bureaucratic in form, democratic in procedure and aristocratic in substance meets for the first time under the revised constitution framed this year and passes the verdict that 'the responsibility for the

CLIVE'S NEWS PARADE

failure of the Simla Conference lies with the British.'

July 22nd. We spend a gala day in gorging, gaming and gazing.

July 28th. With the advent of the Labour party to power we get half a dozen of 'chappatti' and a nil dozen of 'bagala-bath'.

August 1st. Without being misled by vapoury sentiment or visionary gleam, our legislative body passes the resolution that 'co-education is harmful.'

August 3rd. The first number of the hostel Magazine makes its appearance for the year.

August 6th. Caste-system is denounced as being a stumbling block to progress.

August 16th and 17th. V-J day gives us two holidays. It puts an end to our 'chappatti' diet. We get as usual two square meals a day. But we are indeed very unfortunate not to possess that man with the "bottomless stomach".

August 21st. Retreat holidays begin and the home-sick make a homeward march.

August 28th to 31st. Fr. Rajam takes the place of Fr. Ehrhart.

September 1st. Our permanent warden is restored to us. Alas! he has lost one of his teeth.

September 2nd. Our warden congratulates us on having behaved very well 'during his absence in Madras'.

September 12th. The tedium of examinations is over and a gradual evacuation takes place.

Sep. 27th. The second term begins in an atmosphere of uneasy splendour. Domesday details are discussed everywhere.

Oct. 1st. A change in the hostel cabinet is announced. The badminton doubles tourney starts the hostel-day journey. The secretaries of the indoor-games inaugurate their tournament in carrom and chess. Fr. Pruvot acts as the supreme judge in cases calling for arbitration in the indoor as well as the outdoor games.

Oct. 10th. Mr. Srinivasa Aiyangar M.A. B.L., delivers a lecture on the 'Immediate prospect'. The house listens to the lecture with patience.

Oct. 15th. The old order changeth yielding place to the new. But there is no change in our hostel routine.

The clock may move fast or slow,
But the silence hour will be as ever.

Our diet advisers grant us a sumptuous feast of curry and rice.

Oct. 24th. 'The present enlightenment of India is attributable to our contact with the British' is the proposition that engages the minds of our parliamentarians. The annoying bath-room agitates the warden and the government get an adverse vote.

November 1st. Wholesale permission is granted to all those who wish to go home for Deepavali.

Nov. 3rd. Fr. Rector dines in Clive's on Deepavali Day.

Nov. 8th. News spreads that Fr. Warden has disappeared and instead Fr. Pruvot takes his round.

Nov. 10th. Amidst thunder and rain the warden comes home again.

'Self-determination as defined by the Congress is not acceptable' is the resolution of the day.

THE NEW HOSTEL

Nov. 13th. The thirteenth of November is a day to remember. Clives becomes the target of abuse as well as praise.

Nov. 15th. Mr. Rampolla makes an eloquent speech in Tamil under the auspices of our Union.

Nov. 29th. The Selection Examination puts terror into the heart of every member and electric current is exhausted.

December 5th. After the ordeal, people heave a sigh of relief and take to their heels.

January 3rd, 1946. The college re-opens after the successful termination of the Centenary Year. Our Alma Mater greets us with a happy New Year.

There is acute scarcity of water and the situation worsens on the 4th. Many of us take 'French Bath'. But those orthodox men who do not wish to follow foreigners even in times of emergency rush to the Cauveri and drench themselves in the running water under biting cold. Really, they are the heroes of

Clive's! In the evening the situation improves and our bathing ghat is full.

January 6th. The Hostel Day Celebration committees are formed and the special officers take to their jobs in right earnest. The captains come round and knock at doors for a two-anna piece.

January 9th. Mr. K. R. Avadhani, M.A., B.L., gives us an interesting lecture on "Students and their immediate future."

January 12th. The hostel is full of life and vigour and the quadrangle abounds with enthusiastic players and on-lookers. Seeing the vigorous play, even our warden extends the time allotted for play by fifteen minutes.

January 14th. Pongal is a day of feast, feast not only to the stomach, but also to the ears. Our budding baghavathars entertain us with their melodious voice. But we miss the usual member of comedians. Thank God! there is at least one to relieve us from the heavy strain imposed on us by these amateur songsters.

The New Hostel

NO task is more pleasant to us than writing about our own dear and gay Home—the New Hostel.

Yes, We are proud of our Hostel! The four majestic yellow blocks, surrounded by Nature's bounty, the green fields and picturesque scenery remind us of places generally described in literature but rarely found in reality. The morning train's whistle, the sacred cross on the church dazzling in the bright sun, the wonderful

skill of masonry exhibited at the top of the rock of Trichinopoly, which no doubt blazons to the world the skill of ancient Tamilians are daily experiences to a New Hosteller. We are fortunate in this respect and of course it is our pride and the envy of others.

Here we are four hundred coming from all parts of India and Ceylon. Did not one of our ancestors (of course a former Hosteller) remark that the Hostel is a

THE NEW HOSTEL

Museum of Students? Surely this is not a Zoo, though at times we are tempted to think so. We have amidst us a happy mixture of human species from various places and of various sizes, with our President as the maximum tonner and a puny youngster from Udamalpet as the minimum bantam. We have lady-killers like our hockey captain, muscular athletes like our general captain, bath-room nightingales, tufted beauties and dining curios!

In the beginning of this year, we searched for the cheerful face of Fr. Fournier; but in his place we met an energetic, medical Brother, who in addition to his noble profession of medicine, "governs the Hostel with his benign countenance." He is in charge of the kitchen.

With such an atmosphere it is but natural that our games and sports have improved a lot. Badminton seems to be the favourite game with every Hosteller, as it has the commendable patronage of Fr. Warden. (Perhaps it is due to his past association with the Tennis Racket that he favours the Badminton Racket!) It is our hostel that supplied the badminton captain to the college team. Three cheers to our beloved Sanjee! When a separate ground exclusively for our Hostel for football was provided our players displayed their merits and proved that with a little practice they could equal any other team in the College. As a result of the efforts of our enterprising captains we led the rest of the College in games for the Rapinat Trophy; but unfortunately our athletes let us down during the sports and the Cup, though named after our dear Warden, was lost to us for the second year in succession. We look forward to the red-letter day when our Hostellers will carry home the trophy (some night-ramblers may use this opportunity to ask for a night-out!)

In the beginning of this year the fate of the New Hostel Union was hanging in the balance. Being dissatisfied with last year's work, the warden was rather hesitant to continue it this year. But the activities of this year show that the office-bearers are determined to make it a success. The Secretary had his dream realised when the two veteran Professors Mr. B. S. Dandapani and Mr. N. J. Devadas debated on the proposition "There is a good case for Socialism." The Union conducted a music competition and an oratorical contest.

The New Hostel Magazine, is in its tender age of two and one must be very kind towards it in passing judgment. Though the first two issues were a bit disappointing, as they contained no good articles, it is hoped that the third issue will prove successful. Moreover, it appears that it will be printed and distributed to each member of the Hostel.

Adjacent to the main blocks, we have our Assembly Hall, quite modern in every thing like the Opera House at San Francisco. The hall serves both as a recreation hall and a meeting hall. But one doubts whether it is an unmixed blessing, for some students are spending the whole of their evenings within its four walls and under its roof, forgetting the importance of God's sunshine and open air. Everyone enjoys reading newspapers in that spacious and well-lit hall. We get all the popular dailies, weeklies and monthlies including the pro-British "Illustrated Weekly" and the extremely patriotic "Forum."

We hopefully look forward to the day when we shall be provided with a swimming pool.

Here we may draw attention to the conspicuous absence of an infirmary which, it

U. O. T. C. NOTES

is hoped, will be erected soon. Well-equipped and well-furnished, the Hostel is our Paradise and true to its name, New Hostel, it is new in everything big or small. Without any tinge of megalomania, we say that nowhere in the province is there any hostel like ours.

We shall be failing in our duty if we do not pay our respects to the departed soul of our beloved Radhakrishnan. Coming from a respectable family in Porto Novo, he was very brilliant in his studies and popular among his friends. But the icy

hand of Death in the form of the accursed typhoid snatched him away from his parents and friends. Let his soul be at peace in the great Beyond!

We know we have come here not to sing the praise of our Hostel but mainly to study. It is a great honour and privilege for us to be the inmates of this Hostel, which has produced an orator Srinivasan, an editor Sampath and an economist Kumarasundaram. We shall keep up the tradition of this illustrious trio in the coming exam.

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U. O. T. C. Notes

THE 3rd anniversary of B Company, 2nd Madras Bn. U. O. T. C., was celebrated on Wednesday, the 27th Feb. '46 in the Lawley Hall. The unavoidable absence of Rev. Fr. Rector who had kindly consented to preside over the function, was a great disappointment to the officers and the ranks of the Company. However, the breach was quite ably filled up by Rev. Fr. Principal. The function started with Tea at 5 p.m., after which the Annual report for the year 1945-46 was presented by Capt. T. V. Krishnan.

"The year under review started with very happy auguries—the celebrations of the V-E day followed closely by those of the V-J day.—With such auspicious beginnings it is small wonder that the year has been noteworthy in many respects. The strength of the Officers of the Company has been increased by the addition of Mr. G. Gopalakrishnan, whose commission is expected any moment now; secondly a long felt need of the Company

has been met by the coming of S. S. I. McGuinness, whom we have great pleasure in welcoming to our Company; and lastly the War Certificate exams. have brought overwhelming successes.

Recruitment and Strength

The introduction of the War Cert. Exams. has indeed given a fillip to the enthusiasm of our cadets. Recruitment this year was, as usual, a difficult business—we could not find out possible ground on which to reject a great proportion of the vast numbers of quite eligible young men who presented themselves for enrolment. It is a matter of pride and gratification to us that in all these years we have never felt the dearth of boys for enrolment, and we are easily maintaining our full strength of 160 other ranks. What is more, when a call came from the Bn. H.Q. for enrolment of more recruits towards making up the deficiency of one Company, as late as in October, we were not only able to enrol more, but had to disappoint many an enthusiastic young volunteer.

U. O. T. C. NOTES

In this connection I would be failing in my duty if I did not pay public tribute to the hearty co-operation extended by the Wardens of the various Hostels, and particularly by Fr. General Prefect, towards recruitment. Fr. G. P. has really gone out of his way to help us to get the best recruits from the Catholic Boarding and Hostel. In the beginning of the year itself he had from me an assurance that I should admit only those boys who were chosen first by himself and approved. The methods adopted by him might have appeared rigorous and unconventional to some, but they are admirably suited to our purpose. The result is that we have now in our Company a group of the best behaved, most enthusiastic and keenest-minded cadets. I hope the Fr. will kindly continue to take the same interest in our Company and provide us with the right type of boys.

Training

The training season started off in full swing already in mid-July with a hand of keen N.C.O's who had undergone a vigorous training at the Summer Cadre Camp held at Attur in April, 1945. This helped us to keep up the very high standard of training laid down in the present syllabus. We are justly proud of the brilliant results in the War Cert. Exams. which is a clear proof of the efficiency of our training, notwithstanding the inadequate training staff available to us and the large strength of the Coy. and particularly that of the War Cert. trainees.

Musketry

The Annual Weapon Training Courses were fired by all at the end of the first term. The results for this year are as follow:—

1st year Part II:—

No. 775 Cdt. Fernandez, L. A. ...	1st.
" 849 " Velu, R. T. ...	2nd.
771 " Thirunavukarasu, T. ...	3rd.

2nd year Parts II & III:—

No. 598 Cdt. Sivasankaran, M. M. ...	1st.
" 498 L/C. Sundararajan, R. ...	2nd.
" 504 Cpl. Benjamin Diaz, L. ...	3rd.

3rd year Part IV:—

No. 83 Sgt. Kumaravadivel, C. ...	1st.
" 199 U/O Seshadri, M. N. ...	2nd.
" 64 U/O Vincent, S. ...	3rd.

4th & subsequent year Part V:—

No. 6 U/O Clifton, G. ...	1st.
" 6920 U/O Ramiah, R. C. ...	2nd.
" 6950 CSM Simon, M. J. ...	3rd.

Camps

There was a Cadre Camp from the 13th to the 27th of Sept. '45, for the training of War Certs. B. & A-I trainees, the latter a new feature this year. Out of about 90 recruits enrolled this year 72 volunteered for this Camp. The Camp, the first of its kind, has shown that it is really very beneficial, not merely in coaching War Cert. trainees but also in stepping up of the efficiency of the recruits themselves.

The Annual Camp lasting from the 8th to 22nd Dec., '45, was held at Attur. The general feeling of the cadets about the Camp seems to be very satisfactory. The Camp must have been very enjoyable, what with all parades finishing by noon, and nothing but rest and relaxation for the rest of the day.

We were very lucky indeed to have had a visit from our Rev. Fr. Rector and Fr. G.P. We are very grateful to them for the interest they have always taken in the glory of the Company and the welfare

U. O. T. C. NOTES

of our Cadets. What better proof could there be of this than their willingness to undertake a journey of 130 miles to and fro, in one day, along a not very well kept road and that in our Unit truck?

The keenness of our boys and their interest in military training are also shown by the very high percentage of attendance put in by them. We are proud to state that a total aggregate percentage of attendance, as seen from those of the Platoons, is very high, one Platoon scoring even as high as 97% and the others too well above the 90% level. Well, it is up to the newly enrolled cadets of this year who will be the seniors next year, to see that this worthy start is not only kept up but carried still higher up.

This high percentage of attendance could not have been possible but for the active co-operation of Rev. Fr. Principal. We will always remember with gratitude his coming to our rescue once or twice in the case of a few recruits who started well but somehow slackened as days went on. Rev. Fr. Rector has been equally good and interested and expressed his willingness to help us in every way to keep up our glorious traditions. I am happy to say that all this year I have not had occasion to trouble him even once.

Post-Camp Period

The month of January, '46 was a pretty tough one. Mindful of the poor results in the A-I exams. of last year, we spared no pains in the coaching of our boys. I should here mention with deep gratitude and heartfelt satisfaction the wonderful training that was given to our B Cert. trainees by Capt. Suresh Pratap Singh. Though he is officially Officer Instructor of C Coy., he was all out to help our Coy. to his best.

His labours were rewarded with very good and unique results. All his trainees came out successful in the Exams. Even the modest Captain of the Rajaputana Rifles, I am sure, must be feeling justly proud of his glorious achievement.

The results of the War Cert. Exams. have exceeded all our expectations, as well as the previous records, that are nothing short of brilliant. It is a matter of real pride and gratification to us that our Coy. put up 57 boys for A-I exam.—more than double the number put up by the other Companies. Of these 51 passed completely, seven with distinction. Only six missed a pass by failing in just one subject—mostly in drill. These too have no reason to be downcast, since this does not stand in their way of appearing for the next higher exam.

In A-II also our results are equally good; but of the 27 put up only two unfortunates failed and that too in an unimportant subject, Organization. We have one distinction secured by Cpl. Sam C. Bose.

In B Cert. we had our most brilliant results. Of the five sent up all the five passed with a high percentage of marks.

I take this opportunity again to affirm the policy of the Coy. which has always been to help the cadets, by putting up for the exams as large a number of them as come up to a tolerable standard so as to give them an opportunity to avail themselves of the maximum benefits the U. O. T. C. has to offer them. That explains how the largest number of students for each exam has been always put up by our Coy. in the whole Battallion. This has certainly a few drawbacks, as, for instance, the losing of the shield. Our hope is that the boys will appreciate this

U. O. T. C. NOTES

gesture on our part and put forth their very best in coming years.

Inter-Platoon Competitions

The inter-platoon competitions which had been stopped for a few years were re-started this year. The advent of the war and the introduction of War Cert. Exams were the reasons for the temporary stopping of these competitions. The much better conditions now have enabled us to revive these. Of course, we started the competitions rather late this year. But in future I assure you that these will be run in due time. It is very gratifying to note that these competitions were held at very short notices, and in spite of that there had been very keen and healthy rivalry among the platoons.

The results of the competitions are as under:—

- | | | |
|--------------------------|--------------------|-----------------------|
| (1) Drill | Winners No. 5 Pln. | Runners up No. 4 Pln. |
| (2) Route March | " " 4 Pln. | " " " 6 Pln. |
| (3) Musketry | " " 6 Pln. | " " " 5 Pln. |
| (4) Guard Mounting | " " 4 Pln. | " " " 6 Pln. |
| (5) Hockey | " " 6 Pln. | " " " 5 Pln. |
| (6) All round efficiency | No. 6 Pln. | |

Conclusion

In conclusion it is my hope that our Coy. will always forge ahead from good to better. I shall thank first Rev. Fr. Principal for his ready and unfailing support; all the brother officers who have enthusiastically given their best to the Coy.; and all the N. C. O's and especially those who helped us in the Recruits' training both in the Coy. as well as at the Annual Camp training periods; and lastly Cpl. Krishnan, our Coy. Clerk who helped us a lot in the office work. Finally, let us all with a greater measure of determination play our part to perfection towards a brighter and more glorious future."

Rev. Fr. Principal in his presidential remarks pointed out that what India needs most is discipline, and that the U. O. T. C. affords an excellent training ground for this. Hence all cadets must make the best use of this opportunity whilst serving in the Corps and reach a very high standard of discipline.

With a vote of thanks proposed by U/O Clifton thanking the president, the C. O., Rev. Fr. General Prefect and the other distinguished guests for their presence and making the function a grand success, the meeting terminated.

College Societies

The Literary and Debating Society

OUR Society has distinguished itself this year by the variety of subjects dealt with in its meetings. We have quite dispassionately discussed a good many of the vital problems of the day, and arrived at solutions which, if adopted, will alleviate the misery and unhappiness that prevail all over the world.

The inaugural meeting of our Society was held on the 7th August, 1945, when we discussed "Communalism in Indian Public Life". From "Indian Public Life" with "Gandhian Economism" we crossed over to Russia to discuss her policy as a menace to world peace, and came early this February to deal with the U. N. O. which we condemned as inadequate to maintain world peace. Mr. S. J. Ratnaswami, M.A., B.L., Public Prosecutor, Trichinopoly, Mr. S. Suriamurthi, B.A., B.L., Mr. V. K. Vaidyanatha Iyer, M.A., B.L. and Mr. V. Subramania Nadar, B.A., B.L., were the eminent speakers from outside who graciously responded to our invitations to discuss with us these subjects. We place on record here our great indebtedness to them.

Some of our Professors also took an active part in our discussions this year. We are deeply grateful to them for the great encouragement they have given us thereby. We must mention specially the names of Mr. T. Totadri Iyengar, M.A. and Mr. T. Srinivasan, M.A. for discussing with us the future of the study of English in this country, and Mr. M. Arokiaswami, M.A. and Mr. P. Prabhakaran, B.Sc. (Hons.)

for taking part in our debate on the U. N. O.

Two meetings of our Society deserve special mention. As soon as Japan was bombed into submission, we thought it fit to give an opportunity to the general public to have an idea of the fundamental principles of the atomic bomb. So we approached Rev. Fr. J. B. Rajam, S.J., D.Sc. and his masterly exposition of the principles gave the audience the impression that they could easily manufacture this secret weapon of the Allies. The other extraordinary meeting was the one we had recently when Mr. and Mrs. Acharya Kripalani addressed, under the auspices of our Society, one of the largest gatherings we ever had in the Lawley Hall. They explained to us the principles of non-violence and the importance of discipline in our fight for freedom, and commended the tradition of the Jesuits in the matter of discipline. We are specially thankful to these eminent personalities.

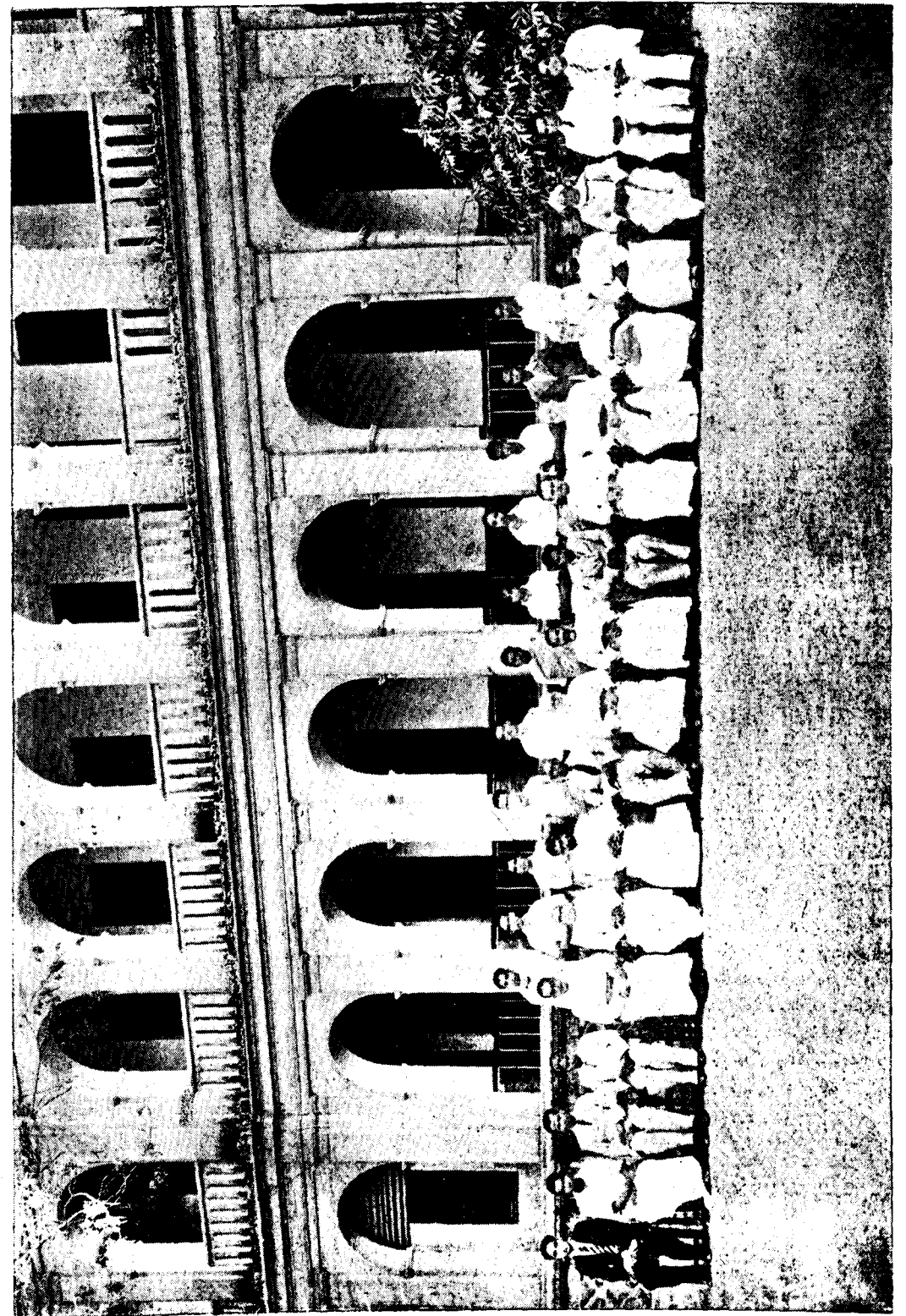
We should be failing in our duty if we did not express our gratitude to our Presidents, Mr. T. Srinivasan, M.A., L.T., and after him, Mr. P. T. Chacko, M.A. for their valuable guidance and services.

T. SWAMINATHAN, III U. C.

P. S. FRANCIS, III B.Sc. (Hons.)

T. JAYADEVAN, II U. C.

Secretaries



OFFICIALS OF THE COLLEGE UNION, 1946

The Physical Society

It is with great pleasure that we place before you the annual report of the Physical Society for the year 1945-46. Thanks to the unceasing and kind help given by our President and the Vice-Presidents an unprecedented number of meetings were conducted in the course of this academic year. A business meeting of the Society was conducted on 14-7-45 when Mr. P. S. Narayanan IV B. Sc. Hons. and Mr. R. Gopalakrishnan IV B. Sc., were elected as secretaries for the senior section and Mr. C. V. Varkey II U. C. and Mr. A. P. Jacob II U. C. for the junior section.

The inaugural address of the Society was delivered by Mr. P. Savarimuthu M.A.

on the 21st July 1945 on "Wireless Reception." Among the meetings special mention must be made of the Debate on the subject 'The atom bomb is a boon to humanity', the delightful account of "Soundless Sound Waves by Mr. P. Prabhakaran B.Sc., Hons. the beautiful lecture on 'Music' by Mr. K. Ananthapadmanabhan B. Sc., (Hons) and the instructive lecture on "Atom breaking, Atom-splitting and the meaning of Atomic energy" by our Vice-President Mr. N. Ananthakrishnan, B.A., (Hons.). A list of other ordinary, but no less interesting meetings, that were conducted is given below.

DATE	SUBJECT	LECTURER	PRESIDENT
28-7-45	Lightning	Mr. A. C. Padmanabhan, V B.Sc. (Hons.)	Mr. K. Ananthapadmanabhan, B.S. (Hons.)
7-8-45	Electronics	" A. Ramakrishna Rao, IV B.Sc.	
21-8-45	Glimpses of Relativity	" R. Subramanian, V B.Sc. (Hons.)	" K. S. Krishnamoorthy
6-10-45	Photo-electricity	" K. S. Nagarajan, IV B.Sc. (Hons.)	IV B.Sc. (Hons.)
23-10-45	India and Science	" R. Gopalakrishnan, IV B.Sc.	" A. C. Padmanabhan
22-1-46	General Review of the Artificial Transmutation of Elements.	" K. Narayanan, V B.Sc. (Hons.)	V B.Sc. (Hons.)
25-1-46	Technique Used	" S. Venkataraman, V B.Sc. (Hons.)	" S. Natarajan,
29-1-46	Induced Radio-activity	" M. A. Lonappan, V B.Sc. (Hons.)	V B.Sc. (Hons.)
1-2-46	Neutrons	" S. Sivaramakrishnan, V B.Sc. (Hons.)	" S. Srinivasan,
5-2-46	Nuclear fission	" T. R. Rajagopalan, V B.Sc. (Hons.)	V B.Sc. (Hons.)
9-2-46	Cosmic Rays	" V. Ganesan, V B.Sc. (Hons.)	" S. Venkataraman
13-2-46	Positrons	" M. C. K. Nambiar	
	Mesons	" R. Subramanian	
16-2-46	β ray Spectra	" K. Gopalakrishnan	" K. S. Santhanam
18-2-46	α ray Spectra	" A. M. Thyagarajan	" A. Arokiaswamy
20-2-46	γ ray Spectra	" K. A. Jossie	

The valedictory address of the Society was delivered by Prof. J. P. Manikkam M.A. L.T., (Head of the Physics Department, Annamalai University) on "Radar and its uses". Sparkling wit and humorous

anecdotes from his vast and rich experience as a Professor formed the interesting sidelights of the address.

The subjects for the annual essay competitions were "Electronics

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Practice" for the Honours Classes and "Spectra and Measurement of wave length" for the Pass course. Mr. A. M. Thyagarajan V B. Sc. (Hons) and Mr. P. S. Narayanan IV B. Sc. (Hons) secured the first and second prizes respectively from the Honours Section and Mr. M. Neelakantan IV B.Sc. and Mr. R. Venkataraman III B. Sc. won the first and second prizes respectively in the other section.

The Chemistry Association

It is with great pleasure that we place before you the report of the working of the Association for the academic year 1945—46.

The activities of the Association began with the election of Mr. P. Raghavachary, IV B.Sc. and Mr. S. Subramanian, III B.Sc., as joint-secretaries. The Inaugural Address was delivered on 27-7-'45 by Dr. P. A. Menon, B.Sc., F.R.C.S., on "The Simultaneous March of Chemistry and Medicine during the War." Rev. Fr. Haas, S.J., presided. The lecturer described the story of the successful search for chemotherapeutic agents and the wizard penicillin.

"War-Babies", was the subject of a talk by Mr. P. Raghavachary, IV B. Sc., on 11-8-45. The lecturer explained fully the functions of gastroscope, electron microscope, the peritoneoscope, the V2's and the atomic bomb. Mr. Nagasundaram, B., IV B. Sc. presided.

On the 1st September 1945, Mr. K. Dakshina moorthy, IV B. Sc., gave a lecture on "The Ultimate Particles". The lecturer gave a vivid account of the atom and its contents and compared it with the worlds at large. Mr. V. N. Hariharan was in the chair.

Lastly, we express our sincere obligations to all the members for their kind co-operation and generous help in making the year under review a grand success.

(Sd.) P. S. NARAYANAN
R. GOPALAKRISHNAN
Secretaries.

With Mr. B. Nagasundaram, IV B. Sc., presiding, Mr. S. Sundaramoorthy spoke on "Explosives" on 6-9-45. The lecturer, described in detail the historical as well as the modern aspects of various explosives and their chemical constitutions. Propellants and high explosives like cordite nuclear energy formed the chief part of the lecture.

The next meeting was addressed by Mr. S. Ramanathan, III B. Sc., on "The Chemical Reactions in the Human Body". The various enzymes in the human body and the methods of their reaction with the various kinds of food were elaborately dealt with. Mr. N. Dharmarajan, B.A., presided.

The industrial importance and the intrinsic value of enzymes and the phenomenon of fermentation were explained clearly by Mr. S. Krishnaswamy, III B. Sc., during a talk on "Fermentation and Enzyme Action", on 24-11-45 and Mr. Nagasundaram occupied the chair.

On the 26th January 1946, Mr. P. Raghavachary gave a lecture on 'Excursions into Chemistry' from the chair. The successful development of new processes for the extraction of magnesium

COLLEGE SOCIETIES

from sea-water, aluminium from clay, dry plasma for blood transfusion etc. were very minutely dealt with.

An extraordinary meeting was addressed by Mr. K. Ananthapadmanabhan, B. Sc., (Hons.) on "Isotopes". The learned lecturer described the phenomenon of radio-activity and the manufacture and industrial importance of isotopes. Mr. S. Jayaraman, B.A., occupied the chair. He also gave a chemical account of the isotopes.

The Valedictory Address of the Association was delivered by Rev. Fr. Lourdu Yeddanapalli, M.A., (Princeton and Calcutta), D. Sc., (Louvain), Ph.D. (Princeton), the Head of the Chemistry Department, Loyola College, Madras, on the 25th February 1946, on "Atomic Energy for Industrial Use". Describing the more active character of energy derived from atoms than that derived from molecules, he very lucidly gave a full account of the diverse industrial uses of the former. He also described the chemical constitution of the atomic bomb. Rev. Fr. J. B. Rajam, S.J., M.A., D.Sc., presided. He hinted very elegantly at the mighty power of the atom

and the mightiness of the great God who created it.

As usual, two essay competitions were conducted, the subjects being "The Importance of Cane Sugar in Industry" for the degree classes and "The Fixation of Atmospheric Nitrogen", for the Intermediate classes. The following are the prize winners.

Degree classes:

Mr. N. Sundaresan, IV B. Sc. and S. Subramanian, III B. Sc.

Intermediate:

S. Sivasubramanian, II U. C. and S. Ganapathy, II U. C.

We thank heartily our president, and the vice-president for their valuable guidance and the members of the Association for their kind co-operation.

P. RAGHAVACHARY, IV B. Sc.
S. SUBRAMANIAN, III B. Sc.
Secretaries

The Malayalee Samajam

It is with very great pleasure that we place before you, Sir, the annual report of the Malayalee Samajam for the year 1945—'46. The year under review has been one of thumping success to us, the credit being in no small measure due to the enthusiastic and encouraging co-operation of all, from the President to the last member. We take this opportunity to express to them our heartfelt and sincere thanks.

with Mr. T. K. Devassia, M. A. in the chair. Messrs. P. V. Jacob and R. T. Mathew were elected as secretaries for the academic year 1945—'46.

The inaugural address was delivered by Miss. Jose, B. A. Lecturer, Holy Cross College, on the 9th August when she spoke about 'Youth and Literature' — a very thrilling and interesting lecture.

There was a heated debate under the presidentship of Mr. K. P. Karunakaran on the 14th August when Mr. George

The activities of the Samajam commenced with the business meeting on 28-7-1945,

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extempore in Sanskrit on the 14th, of February on the following subjects:—

B. A. Class: Means for the revival of Sanskrit language.

Intermediate: Concept of Duty as expounded in the Ramayana.

Messrs V. Gopala Iyengar M.A., and M. M. Mani, M.A., kindly acted as judges and the prizes were awarded as follows:—

B. A. Competition

- I prize K. V. Lakshmanan IV U. C.
II „ K. M. Balasubramanian III U.C.



Mathematics Association

It is with very great pleasure, that we place before you, Sir, the annual report of the Mathematics Association for the academic year 1945-'46. The year under review has been one of successful activity.

On the 13th July 1945, a business meeting was held under the presidentship of Sri T. Totadri Iyengar, M.A., when Messrs. R. Sundaresan, IV (Hons.), T. A. Varghese, IV (Hons.), C. Srinivasa Murthi, IV U.C., were elected Secretaries for the academic year 1945-'46.

The inaugural address of the Association was delivered by Dr. A. Narasingh Rao, M.A., D.Sc., F.A.Sc. Professor and Head of the Department of Mathematics, Annamalai University on Saturday the 21st July. Prof. T. Totadri Iyengar occupied the chair. The learned doctor chose "Newton's laws of motion" for his topic and dealt with it in a novel and very interesting way.

An ordinary meeting of the Association was held on the 2nd August 1945, when

Intermediate

- I prize R. Ramaswamy II U. C.
II „ J. Ramanathan I U. C.

In conclusion we beg to place on record our deep sense of gratitude to all our professors and students who have helped us to make our work a success.

(Sd.) K. V. LAKSHMANAN
(Sd.) R. RAMASWAMY

Secretaries

K. R. Venkateswaran, IV (Hons.) spoke on the "Number Concept".

An extraordinary meeting of the Association was held under the presidentship of Sri T. Totadri Iyengar, M.A., on the 10th August when Dr. B. S. Madhava Rao, M.A., D.Sc., Head of the Department of Mathematics, Central College, Bangalore, addressed the Association on the "Role of Algebra in Physics." The meeting was largely attended. The lecture was instructive and inspiring.

Under the auspices of the Mathematics Association a course of four honorary readership lectures on "Quaternions" was delivered by Sri. Totadri Iyengar, M.A., on the 29th September and the first, second and third October. A brief sketch of the life of Sir Rowen Hamilton, the inventor of the theory of quaternions, was outlined. Then the theory of addition, subtraction, multiplication and division of two quaternions was developed. The lecture showed how the ordinary Algebra of real

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quantities and the Algebra of complex quantities were but particular cases of the quaternions. After requesting that some at least should take up the study of quaternions, after finishing their course, in view of the connection of the subject to latter day development in modern Physical theory, the lecturer concluded his series.

An ordinary meeting was held on the 22nd November, when N. Gopalakrishnan, B.A., spoke on the mathematical aspect of Economics. S. Raghavan, V (Hons.) Economics, occupied the chair.

An extraordinary meeting of the Association was held on Monday, the 21st January, 1946 when Sri. S. Sreenivasan, B.A., (Hons.) delivered a lecture from the chair on "Finite differences and its application to interpolation." The talk was very suggestive and largely attended.

The valedictory meeting of the Association was held with Rev. Fr. C. Pruvot, S.J. in the chair. After garlanding an address was read by Mr. Totadri Iyengar, on behalf of the staff and students of the Mathematics department, and presented to

Rev. Fr. Pruvot. The Rev. Father replied suitably.

The contest for the mathematical prizes also came off in Feb. 1946. Messrs. T. R. Subramanian, V (Hon.) (Problem contest) K. Ramamurthi (V Hons.) (Elocution) S. Venkata Subramanian, V U. C. and Ramachandran, IV U. C. were the prize winners. Our hearty congratulations to them.

A year's activity is at an end. We shall be failing in our duty, if we forget to express our sincere gratitude to Rev. Fr. Pruvot, the President and to Sri. T. Totadri Iyengar for the encouragement and able guidance given to us during the whole year.

Our thanks are also due to the members of the Association for their spontaneous co-operation.

R. SUNDERESAN
T. A. VERGHESE
C. SRINAVASA MURTHY
Secretaries

ADDRESS PRESENTED TO

Rev. Fr. C. Pruvot, S.J.

*Head of the Department of Mathematics,
St. Joseph's College, Trichinopoly,*

DEAR REVEREND FATHER

Please allow us on the occasion of the Valedictory Meeting of the College Mathematics Association, to place on record our sense of profound gratitude to you, who have been President of the Association from its inception. Though you may fain protest that you have not been actively helping us recently, we recall that even during these latter years, you used occasion-

ally to take the chair and deliver yourself, in characteristically slow but impressive fashion, of those sallies of wit that drew the loud and admiring acclamations of the audience.

To the century innings that our Institution has so gloriously scored, your contribution has been well over fifty. In fact you used to say with a gleeful chuckle

that you have taught Mathematics more years than the oldest among your present departmental staff have lived. Of your erudition and your long professorial experience, the University has periodically benefited to the full, by drawing on your services in various capacities.

To your love for the youthful votaries of Mathematics, you have added an equal love for the exponents of various sports and games, indoor or outdoor. Imposing as is your record of service towards Education on its intellectual as well as on its physical side, and deeply religious as we know you are, we would say that another and surely the most important aspect of yourself is your 'humaneness', as we may term it. An occasional gleam of anger we have come to recognise as only the

precursor, like lightning, of a heavy shower—a shower of sympathy and good humour. Inherent in the towering three dimensions of your person, we easily recognise the fourth dimension of your breezy and jocular good nature.

We all hope and pray that wherever you are, whether here on the hot plains with us, or in the cool hills of your favourite Kodaikanal, God grant you long life, good health, and cheer. Permit us to assure you once again of our esteem and gratitude, and to subscribe ourselves as

Very sincerely yours in affection,

STAFF AND STUDENTS OF THE MATHEMATICS DEPT.

TRICHINOPOLY }
27-2-46 }

The History and Economics Association

With great pleasure, we present before you the report of our Association for the academic year 1945-46.

The activities of the Association commenced with a business meeting held on the 23rd July, 1945 when Messrs. B. V. Ranganath and Mr. M. K. Gnanapragasam both of the IV Hons. class were elected Joint Secretaries for the year.

Rev. Fr. P. Carty, S.J., delivered the Inaugural Address on the 24th July, 1945, the subject being "Economics and Human Relationships." After giving the exact definition of the Economic Science he pointed out at length that production of wealth should be to help humanly to a better living. "If civilisation is to survive, we must cultivate the science of human relationships," he observed.

The British Electorate pronounced its verdict in favour of the Labour Party and the Conservative die-hards had to make way for the former. "Whether the House should welcome the Labour Victory at the General Elections" was the subject on which we debated on the 20th August 1945 with Mr. M. Arokiaswamy, M.A., in the chair. Mr. R. Seshachalam, (Post-graduate) welcomed the Labour Victory which meant welcoming their Programme, viz., a good housing policy, adequate social security, full employment and raising the standard of living. Mr. G. Vetrivelu, V Hons. who led the opposition indicated how the Labour Programme is only Russian Socialism which meant sounding the death-knell to liberty. There was a record gathering and a heated debate ensued. However, the House resolved not to welcome the Labour Victory.

On the 8th October, 1945 Mr. M. K. Gnanapragasam read a very valuable and useful paper on the "Decimal System of Coinage." Mr. M. Arokiaswamy, M.A., took the chair. A lively discussion followed after which the President made a few useful observations on the necessity and benefits of our present Indian Coinage system.

On the 13th October, 1945 was held a debate with Mr. R. Seshachalam in the chair, the subject being "Nationalisation of the Bank of England is necessary." Mr. G. Joseph, V Hons. moved the proposition in the course of which he explained the merits of nationalisation, how it would conduce to greater efficiency of the bank and how the profit motive would be eliminated. The opposition was led by Mr. P. V. Srinivasan V Hons. Mr. A. Hirudayaraj, M.A., acted as the Observer. The motion was carried.

An extraordinary meeting was held on the 29th October, 1945 when Mr. R. Subbiah, M.A., Lecturer, Holy Cross College, spoke on "Some Future Political Problems of India". He put forth a strong plea for Dominion Status, which, if achieved would solve India's major political problems. He also explained the economic advantages that would follow if India were to be included in the Dominions.

"The nature and scope of the United Nations Organisation" was dealt with at very great length by Mr. M. Arokiaswamy, M.A., in a meeting held on the 19th January, 1946. The speaker with his characteristic clarity of thought and lucidity of expression spoke of the Organisation as an instrument for the maintenance of international peace and security, of its structure and the conditions of its successful working. After an exhaustive account of the various organs of the U. N. O., viz.,

General Assembly, Security Council, Economic and Social Council etc., he pointed out that if the edifice of peace and security was to be built firmly and squarely it should be built on Justice.

With Mr. A. Hirudayaswami, M.A., B.L., as Speaker, the question "Whether Communism is preferable to Capitalism" was discussed on the 25th January, 1946 Mr. S. Venugopalan IV Hons. very ably moved the proposition and a vehement opposition was led by Mr. P. V. Srinivasan V Hons. who explained how communism ignored human aspects. On both sides supplementary speakers waxed eloquent. The House was, however, in favour of Capitalism. "In so far as Communism is a negation of religion, negation of family life and affections, it stands condemned", observed Mr. A. Hirudayaswami.

The most interesting, lively and exhilarating debate was that held on the 1st February, 1946 with Mr. S. A. Lobo, M.A., B.L., L.T., in the chair, the subject being "Under the present circumstances, it is wise to accept the League demand for Pakistan." The mover of the proposition Mr. T. Sabapathy, IV Hons. and his able seconder Mr. K. P. Karunakaran, IV Hons. showed clearly how Pakistan is justifiable and feasible economically, politically and culturally. In leading the opposition, Mr. V. Neelakantan IV Hons. observed that Pakistan would plunge the country in confusion, civil war and disaster. The two nations theory had long been exploded. Pakistan is only a counsel of despair. After a very heated and uproarious debate, the motion was carried.

With the valedictory address by Mr. S. K. Sarma, B.A., B.L., presided over by Rev. Fr. P. Carty, S.J., on the 25th February, 1946 the activities of the Association concluded. The subject of the address was "Post War Planning."

COLLEGE SOCIETIES

As usual, the Essay competition attracted many a member to exhibit his talents and a good number took part in it. The winners of the competition are as follow: Mr. J. Thomas (IV Hons.) and Mr. S. Sethurathnam (IV Hons.) Mr. S. S. Theodore, IV U. C., and Mr. A. V. Poullose, IV U. C. and Mr. S. P. Shivapatham, II U. C. for Honours, Pass course and Intermediate classes respectively.

The year under Report has been one of encouraging success. We express our heartfelt thanks to Rev. Fr. P. Carty, S.J., the President, who is a great source of inspiration and enthusiasm. We take this opportunity of conveying our ever-abiding sense of gratitude to our Vice-President,

Mr. M. Arokiaswami, M.A., for his able guidance and ready assistance. Lastly, we thank the staff and members of the History and Economics Association as well as its well-wishers for the willing hand of co-operation they had lent us all these days.

REV. FR. P. CARTY, S.J.,
President.

MR. M. AROKIASWAMY, M.A.
Vice-President.

MR. B. V. RANGANATH, IV Hons.
MR. M. K. GNANAPRAGASAM, IV Hons.
Secretaries.

தமிழ்ச் சங்கம்—ஆண்டு அறிக்கை

இச்சங்கத்தின் அமைச்சர் தேர்வு 15-7-'45 மாலை தலைவர் திரு. ஐயன்பெருமாள் கோனார் அவர்கள் தலைமையில் நிகழ்ந்தது. பி. ஏ. வகுப்பிற்கு S. சுந்தரம், சூசைராஜ், இன்டர் வகுப்பிற்கு செளந்திரபாண்டியன் ஆகியோர் அமைச்சர்களாகத் தேர்ந்தெடுக்கப்பட்டனர்.

18-8-45 சனிக்கிழமை மாலை லாலி மன்றத்தில் லால்குடி வித்வான் அ. நடேச முதலியார் அவர்கள் 'தமிழ் நிலை' என்பது பொருளாகத் தொடக்கச் சொற்பொழிவாற்றினார்.

24-11-45 சனிக்கிழமை மாலை லாலி மன்றத்தில் திரு. சம்போலா மஸ்கோனஸ் அவர்கள் தலைமையில் திருசிபுரம் கி. ஆ. பெ. விசுவநாதம் அவர்கள் 'தமிழ் இன்பம்' என்பது பொருளாக ஓர் அரிய சொற்பொழிவாற்றினார்.

15-1-46 செவ்வாய்க்கிழமை மாலை லாலி மன்றத்தில், துத்துக்குடி புலவர் திரு. M. P.

மஸ்கோனஸ் அவர்கள் தலைமையில் வீரமாமுனிவர் விழா சிறப்புறக் கொண்டாடப் பெற்றது. அவ்வமயம் சேசு சபை சங்க. ஞானாதிக்கம் சுவாமியாசுவர்கள் விழாவினைத் தொடங்கி வைத்துத் தமிழ் மாணவர்களது முயற்சியைப் போற்றி ஆசீர்வதித்தார்கள். சென்னை திரு. S. செல்வராஜ் ரெட்டியாசுவர்களும், துத்துக்குடி திரு. அ. மாசிலாமணிப் பிள்ளையவர்களும் வீரமாமுனிவரது தமிழ்த் தொண்டைப்பற்றியும், நூல் நயங்களைப்பற்றியும் இனிது எடுத்துரைத்தார்கள். நன்றி கூற துக்குப்பின் விழா இனிது முடிவுற்றது.

7-2-'46-ல் கும்பகோணம் அரசியலார் கல்லூரியில் நிகழ்ந்த மகாமகோபாத்யாய டாக்டர் சுவாமிநாதையாசுவர்கள் நினைவுத் தமிழ்ச் சொற்பொழிவில் நமது கல்லூரித் தமிழ்ச்சங்க அமைச்சர் S. சுந்தரம் (பி. ஏ. வகுப்பு) கலந்துகொண்டு, முதல்வராக வெற்றி பெற்றுப் பொற்பதக்கமும் பெற்றார்.

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26-2-46-ல் நமது தமிழ்ச் சங்கத்தின் சார்பில் நிகழ்ந்த சொற்பொழிவுகளில் பி. ஏ. வகுப்பில் ஜெயசீலன் முதலாவதாகவும், இராமசுவாமி, பாலஜெகநாதன் இருவரும் இரண்டாவதாகவும் தேர்ந்தெடுக்கப் பெற்றனர். இன்டர் வகுப்பில் ஜெம்புநாதன் முத

லாவதாகவும், சுவாமிநாதன் இரண்டாவதாகவும் தேர்ந்தெடுக்கப் பெற்றனர்.

சுந்தரம்
சூசைராஜ்
செளந்திர பாண்டியன்
அமைச்சர்கள்.

Botany Association

With great pleasure, I place before you the Annual Report of the Botany Association for the Academic Year 1945-1946.

The work of the year began on 26-7-45 when at a business meeting, Mr. D. A. Jeyaseelan, IV U. C. was elected secretary of the Association, with a large majority of votes.

The inaugural address was delivered in the Chemistry Theatre on 29-8-45 by Rao Bahadur Dr. Y. P. Vasudeva Iyer, M.B. B.S., B.S.Sc. the Municipal Health Officer of Trichinopoly, the subject being "Problems of Bacterial Immunity." Dr. Iyer is a scientist of vast experience in urban and rural sanitation, hygiene and health. He is also a very impressive speaker. His address therefore on bacterial diseases and their prophylaxis was an intellectual treat of rare excellence.

The first ordinary meeting was held on 4-10-45 when Mr. P. N. Subramaniam, IV U. C. spoke about "Pollination in Entomophilous Flowers" with Mr. Hrishikesan Nair in the chair.

On 12-10-45 Mr. V. Antony James, III U. C. lectured on "Secretory Glands" when Mr. V. M. S. Dharmanathan, IV U. C. took the chair.

Under the chairmanship of Mr. R. Vasudevan, IV U. C., Mr. Periyaswamy, IV U. C. spoke on "Taxonomy" on 26-10-45.

"Seed Habit" formed the subject of the lecture of Mr. Krishnadas, IV U. C. when Mr. J. L. Moraes, IV U. C. presided over the meeting held on 9-11-45.

Mr. S. P. D. Chelladorai, IV U. C. delivered a lecture on "Storage Organs" on 18-1-46 with Mr. K. Sukumar, IV U. C. in the chair. Though the attendance on this occasion was poor, the intervention of the President of the Association in the interesting discussion that followed the learned lecture, elucidated some of the points of plant-economy seldom treated in books and so the meeting was highly successful.

The usual essay competition conducted by the Association brought out this year some brilliant contributions from the Junior Intermediate Students. The standard of the essays written by the B. A. students was also fairly high. The medallists are: N. Hrishikesan Nair, IV U. C. and T. Ramachandran, I U. C.

The Valedictory meeting of the Association was held on 23-2-1946 under the Presidentship of Rao Saheb G. Rajagopal pillai Avergal, Mittadar of Bikshandarkovil. On this occasion a portrait of the late Mr. R. Ananthakrishna Iyer, M.A., was unveiled by the president. The meeting was attended by many distinguished persons from the town.

I have to place on record, at the end of this annual report, our sense of great loss

COLLEGE SOCIETIES

and deep feelings of grief at the death of Mr. R. Ananthakrishna Iyer, M.A., in May, 1945. He was our Vice-President from the very beginning of the Association. To him was due in a large measure its success year after year. Our consolation now is that in Captain T. V. Krishnan, B.Sc. (Hons.) his successor, we have as energetic and sympathetic a Vice-President as the late Mr. Ananthakrishna Iyer himself. There can be no greater praise.

I avail myself of this opportunity to thank Rev. F. Rapinat, S.J., the Head of the Department of Botany and Rev. Fr.

Balam, S.J., our President for their constant help and encouragement.

It is my pleasant duty also to thank all the Botany students for making the work of the Association the grand success that it is, and especially for their liberal contribution towards the cost of the portrait of the late Mr. Ananthakrishna Iyer.

D. A. JEYASEELAN,
Secretary

The Pudukottai College Diamond Jubilee

DEAR SIR,

It is proposed to celebrate the Diamond Jubilee of H. H. The Raja's College, Pudukkottai, in the course of this year. The Golden Jubilee, it will be remembered, was celebrated in 1934 with very great enthusiasm. Though the Diamond Jubilee fell due in 1945, it was considered advisable to put off its celebration till the termination of the war.

It is very likely that the College will soon be raised to the status of a First Grade College. When this is done, the College will be enabled to continue its career of usefulness even in a larger measure than before. The College has done a great service in the past and its future will be charged with even greater possibilities. The shortage of Colleges in the Presidency and the difficulties experienced by students seeking admission into the B.A. Classes (which threaten to become chronic) render it a matter of urgent necessity to provide a larger number of First Grade Colleges than there are at present. We trust that H. H. The Raja's College

will soon be raised to the status to which it is entitled by its excellent record of work. It will be an act of graceful piety if the inauguration of higher grade college teaching should be marked by the alumni of the College celebrating the Diamond Jubilee of the ALMA MATER. The occasion may be utilised to provide such amenities as may conduce to larger intellectual and social life among the students.

It is proposed to celebrate the Diamond Jubilee sometime about the beginning of August. The exact date will be notified later.

Meanwhile, all old students and well wishers of H. H. The Raja's College and all lovers of education are requested to contribute liberally to make the celebration a success.

Donations may be sent to the Secretary, Diamond Jubilee Celebration Committee, Pudukkottai.

Yours sincerely,

THE DIAMOND JUBILEE
CELEBRATION COMMITTEE



THE COLLEGE CRICKET TEAM 1945-46
WINNERS OF THE S. ZONE TOURNAMENT



THE COLLEGE HOCKEY TEAM 1945-46
WINNERS OF THE PENTLAND SHIELD AND T. D. A. A. SHIELD

The College Athletic Association (1945-1946)

The annual day of the College Athletic Association was celebrated on Monday the 25th Feb., '46 at 5 p.m. on Mahé Grounds presided over by K. Sadakopan Esq. M.A., Financial adviser and Chief Accounts Officer to the South Indian Railway.

The distinguished guests and spectators were 'treated' to a fine game of basketball. This final match between IV U.C. and II U.C. in the college home tournaments was really exciting. Both teams were well-matched and the result was decided in favour of the elders only towards the very end.

After a short speech by Mr. P. R. Subramaniam welcoming the president—a distinguished OLD BOY—and all those present the annual report was presented which said:

"In presenting the report of our activities in the field of athletics and games for the year 1945-'46 we have pleasure in recording all-round success and splendid achievements particularly in the University tournaments. Laurels in all the three games, cricket, football and hockey are ours and we have annexed the Pentland shield for hockey for the 2nd year in succession.

Our six year-old cricket club after its temporary teething troubles of last year has now outgrown all expectations. The departure of our all-rounder Perumal seemed a total loss. But no. We easily found in E. H. B. David who came with a reputation from Ceylon an outstanding and steady batsman and bowler, while

wicket-keeping was ably taken over by Gnanadass. In Ashok we have a tricky bowler while young Aruvamudhan and Thurai Rajan have proved to be good scorers. The first match in the University tournaments against Kumbakonam College gave us a win by an innings. The semi-finals proved more encouraging. There the Pudukkottai College who defeated us last year by ten wickets readily bowed to us and conceded the honour by an innings and nine runs. At the finals we met Tinnevely Hindu College and wrenched the victory by ten wickets at Pudukkottai. Of course, it must be said that though our captain Sunderarajan's first ball brought down the first wicket of the opposing team, the distinguished spectators had rather a shock when after lunch they saw 3 of our fine batsman dismissed in a few minutes consecutively by l. b. w. Our total score was, however, high enough and so we had to make just a few runs in the 2nd innings for a win. This we got easily the next day and came home with all honour. Our thanks are certainly due to Mr. P. R. Subramaniam staff-member-in-charge for his personal interest, Rev. Fr. Arulsami, S.J., for his encouragement and shall I say the blessings of our College veteran sportsman Rev. Fr. Pruvot, S.J. Our overall record too is creditable. Of the ten matches played we won six, drew one and lost three. Our thanks are also due to the great cricket enthusiast of the Town Sri. P. R. Thevar, Chairman, Municipal council for his offer of a fine bat for the first centurion this season which was easily and deservedly won by E. H. B. David.



THE COLLEGE FOOT BALL TEAM 1945—46
WINNERS OF THE S. ZONE TOURNAMENT

THE COLLEGE ATHLETIC ASSOCIATION

With pardonable pride the hockey team can boast of its double success this year. The T. D. A. A. open shield and the Lord Pentland shield are both ours. With Fr. Arulsami, the hockey specialist of Palamkottah, at the helm of the games dept. nothing less could certainly be expected. With a well-balanced team really licked into shape by defeats and successes in local matches we ventured into the Gidney memorial tournament. Our success over the R. I. A. F. by four-nil in the 1st round put us in a false position. In spite of a draw on the 1st day in the next round we had to go down the following day by one goal fighting a really superior team from outside. This experience gained proved all the more useful. We were definitely better placed at the T. D. A. A. tourney. At the finals the Reserve police team surrendered the honour and the fine shield to us. Our crowning success indeed was at the University tourney. After the semifinal match with Pudukkottai Raja's Coll. with the scores at nine nil we met our opponents, the redoubtable St. Xavier's, team-nine times winners of the Pentland shield, in their own atmosphere at Palamkottah. The match proved really exciting. For the first ten minutes the game was one-sided and rather unsteady for us, with St. Xavier's players dominating. They netted the ball from a short corner and took the lead. This, however, pricked us. And in less than five minutes Clifton nipped in to beat the goalie off a re-bound. As usual with the goals even the pendulum of the game swung cautiously. We were determined to win and so too were they. Nelson was outstanding in the defence. Time and again he foiled many a dangerous move by the opposing forwards while Roderigues and Clifton thrilled the opponents with their short quick passes. Just ten minutes before the finish Vijayaraghavan scored the winning goal off a

pass from Pushparaj and later we triumphantly marched off with the Pentland shield for the second year in succession. Most of the members of the team stay on for next year and it is hoped that with the usual annual reinforcements they will keep up the standard and efficiency.

The College football team continues to retain its reputation. We have won the University inter-collegiate tournament for the 2nd year in succession. The addition of Sahib Jan has definitely strengthened the defence. Our 1st match with Kumbakonam was rather a walk-over with the scores at nine-nil. But later at the finals we met our well-seasoned opponents of the American College at Madura. The match had to be really fought out. Their forwards were ably met by Sahib Jan while Swamidass brought off many a splendid save at the goal line. Our all-rounder, K. T. Mathew at centre-half and the fine combination of the forwards Stanley Davidraj and Diwars kept the game in our favour and we finished victorious though by the only goal scored on the day. We proved not too bright at the T. D. A. A. but we had some fine friendly matches, particularly an interesting one with the big R. A. F. team. Our offence ever kept their defence mobile but at the end their offensive defence proved successful.

It must be frankly admitted that, unlike in previous years, our athletes have not won too many distinctions. Though the college annual sports meet exhibited keen competition we had to be satisfied with a number of certificates at the T. D. A. A., finishing 2nd in the aggregate. And with the sudden departure of Stanley early in January our athletic team returned with only the runner-up consolation from the University sports at Madura. Though

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the fine victory at the Relay race was excellent in itself we had to be satisfied with 2nd or 3rd places in other events.

Amongst the minor games, Basketball continues to be interesting and most popular. Thanks to the personal enthusiasm of Fr. Principal, our basketballers entered the Loyola tournament early in the year with confidence. In spite of their fine performance they had to concede the honour at the finals by a narrow margin to the Thevara Coll. team who seemed to be all out for this game. Our centenary basketball tournament proved an excellent carnival with fine teams from Annamalai University, Palghat and Thevara. Though it is gratifying to record that we turned the tables against Thevara in the semi-finals and made up for our slip at Madras, Dame luck again would not favour us. We played the finals against Palghat. The 1st half gave them the lead and put them in rather an over-confident position. In the 2nd half Thambi was in his elements. Scoring in excellent style we not only equalised but showed definite signs of winning. For about ten minutes before the close the scores were, as it were, 'Deuce, Van in' Deuce and Van out. Feelings ran high. Spectators and players were alike thrilled. Anxious eyes often cursed the second hand of their watch; the result seemed to be hanging on a thread. But the watch did it—the wrong way for us. At the last second Palghat Mani netted the ball and claimed the cup for his team. Whilst conceding that they had some very fine players as a team we combined better—But they were lucky and so we are not unhappy.

We have a strong Volleyball team. They have won the finals at the T. D. A. A. opens tournament.

The standard in badminton is not low though they have failed to win cups or other special distinctions.

The Home tournaments in all games were well contested and every match was really fought to a finish.

We are glad to record that this year, competitions for Rev. Fr. Rapinat trophy were thrown open to day-scholars also. The matches in all games were played on the League system in the first term. And at the end of the College annual sports the trophy was awarded to the day-scholars' team which secured the highest number of points on the aggregate. This competition served a useful purpose by bringing out all latent, but rather shy, talents early in the year thus enabling us to select the best players to form the College teams.

With the war over, our tennis enthusiasts naturally look forward to the restoration of the tennis courts. With pleasure they have been watching the lay out of some of these. But it is rumoured that the balls have not rolled in! It will certainly be a immoral not to say criminal act by the civil authorities if they do not recognize our sacrifice during war. We gave up tennis to conserve rubber for war purposes. But now have we not a right to ask for it? We shall confidently look forward to next year for all the courts to flourish.

Before concluding, allow us to mention that our ambition to have on our vast playgrounds a full-fledged cricket match pitch and a decent pavilion with a pucca running track for sports remains unfulfilled. Playgrounds we have in plenty but so too trees and roads in between, not to speak of the inconvenience due to different ground levels. We hope and trust that before long things will improve so that we may invite outside teams to play cricket matches on our grounds, thus providing a treat to the budding cricketers who often find it inconvenient to go

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to distant Puthur or Golden Rock to witness matches.

Finally, we are proud that we have been the pioneers in the first year of the second century of the life of our dear Alma Mater. We have reached the first mile-stone in good style and with a fine lead. May our brothers who follow keep up and hold high the banner of efficiency and the excellent spirit of St. Joseph's.

Amidst cheers and great applause to individual heroes and teams the president

then distributed the various certificates and cups. In his concluding speech he congratulated the college on its great strides in outdoor activities and wish greater success to the outgoing sportsmen in their future game of life.

• With a hearty vote of thanks proposed by the general captain, F. Diwars amidst loud cheers to all those present the pleasant function came to close.

RESULTS—HOME TOURNAMENTS

GAME	WINNERS	RUNNERSUP
Football	I U. C. Sargunam's team	III U. C. K. T. Mathew's team
Hockey	I U. C. Blood-reds	IV U. C. SAADFAG.
Volleyball	II U. C. T. L. Varkey's team.	II U. C. Sivasubramaniam's team
Badminton	N. Gopalakrishnan Etc. team	Swaminathan Etc. team.
Basketball	IV U. C. Thamby's team	II U. C. Minosar's team.

The College crest awarded to:—

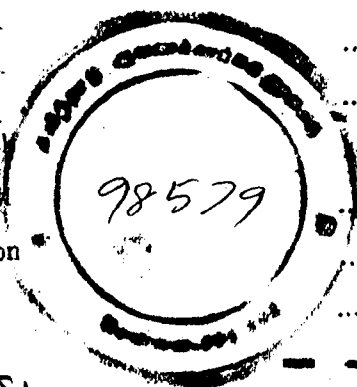
F. Diwars.

George Clifton.

P. Chinnathambi.

COLLEGE CAPTAINS 1945-'46

Capt. for Football	... F. Diwars	... IV U. C.
Hockey	... G. Clifton	... IV U. C.
Cricket	... R. Sundera Rajan	... II U. C.
Basketball	... P. Chinnathambi	... IV U. C.
Volleyball	... T. L. Varkey	... II U. C.
Badminton	... Ibrahim Sanjee	... III U. C.
Athletics	... Stanley Christian	... I U. C.



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