



EDITORIAL

BIRTH OF A NEWSPAPER

Just over fourteen years ago a competitor to the then major Union Publication PHOENIX was introduced. Called Felix it was meant to complement the above by reporting social and sporting events of topical and general interest. The first issue in December 1949 was of 600 copies which sold out before 10.00 a.m. on the first day; subsequently 1,000 were printed. At that time FELIX was run by a highly enthusiastic group of people and printed (Roneo'd) in the bookstall by Miss Larkom. Soon, however, the process was changed and a more sophisticated electrostatic method capable of photographic reproduction was introduced.

INDEPENDENT

By the 45th issue apathy and shortage of copy were making themselves felt, and in 1953 a rival appeared in the shape of Sennet. But FELIX recovered, and the standard of writing and production remained remarkably high. All this time the newspaper had run in a financially healthy and solvent state with no grant from the Union. In October '56 the then Editor wrote, "As always FELIX is independent of financial support from the Union. Your Union Council cannot dictate to you through the paper."

NEW PROCESS

It is not clear when FELIX first applied for a grant, but it is probable that this became necessary in January '59, when the paper was printed for the first time by the present process. We have been with Wing Commander Garby and the West London Offset Co. ever since and owe him much gratitude for help with layout and continued interest and encouragement; FELIX has changed greatly since he first took it on, and he has always been keen and quick to suggest improvements. The change to offset printing took much of the drudgery out of production and left the staff very much more time for improved layout techniques and coverage of events.

THE ADVENT OF ADVERTISING REVENUE

Over the next two or three years FELIX went through a succession of editors and a large portion of Union funds. It was usually an eight-page issue, but sometimes only six—a notable exception was a twelve-page sport issue which lost something like forty pounds. At the beginning of '62 it was decided by the executive that something should be done to stem the mounting costs of production. Instead of tackling the problem from the revenue end they tried to cut costs by purchasing a Gestetner duplicator which never really got going (but which is now used for the late news sheet). That same summer the EDUCATIONAL PUBLICITY CO. were approached and asked whether they would supply us with regular advertising. They have done so ever since and have played the major part in enabling FELIX to continue in its present form. We are particularly grateful to Mrs. J. Platford of the above who has helped us through many difficult situations. Well over half our revenue comes from this source and we are entirely dependent on them for our healthy financial state.

A YEAR OF EXPANSION

Last year established something of a record in that the Editor Mr. Pawlowicz remained in office for the whole year and broke even financially at the end of it. On this firm and essential foundation this year's policy of expansion has been built. We have a large staff (over 30 excluding sales girls), and each of the major positions on the staff is duplicated by a student who (barring accidents) will be here next year; this will ensure a smooth transition of staff over the summer. The late news supplement has come into operation for the first time, and we also have our new black sales tins around the College. Issues have regularly been of ten or twelve pages, and the Freshers' issue a record fourteen. Financially we are healthy, and neither copy nor sales shows any signs of falling as they usually do at this time.

Felix is rapidly becoming a newspaper, with enthusiasm and ideas snowballing. The continuity of the process started 14 years ago, and given new life in the last three, must be allowed to continue. Any break in this progression could bring Felix to its knees, and such a step would not be taken lightly. It is essential to the advertisers in, to the readers of, and to the Union in which it is, that Felix does not cease publication.

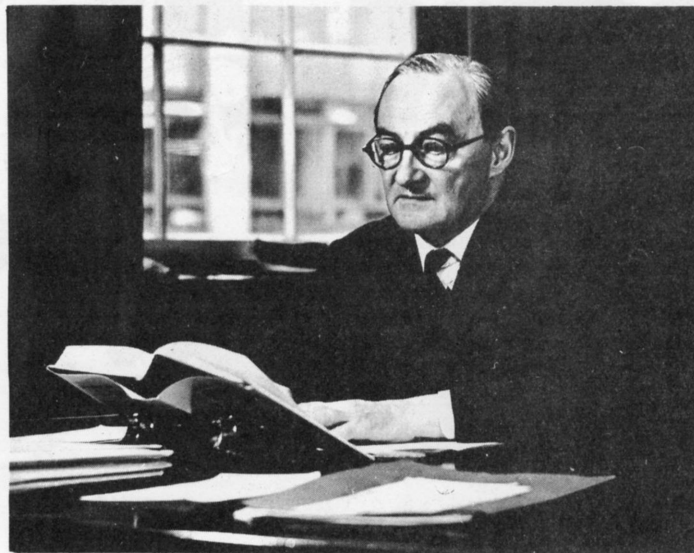
FESTIVAL HALL MIMICS REPULSED

Last week 70 Regent Street Poly students battled with attendants and were thrown out, when they tried to raid the Festival Hall. Their effort was an attempted copy of I.C.'s successful raid which raised £66 last May.

Quote

Overheard at Square Dancing from one M.T.S.V.P. of South Side:

"If she was a little bit wicked it would be bloody fabulous."



I welcome the opportunity to send greetings to "Felix" on the occasion of its 200th edition. An unbroken run from 1949 is no mean achievement amidst the periodic crises which beset student newspapers. From India I send my best wishes for a vigorous and successful future.

PATRICK LINSTAD
Rector.

FELIX

Chairman, Felix Board ...	H. D. D. Watson
Editor ...	J. M. Combes
Production Manager ...	N. J. Walker
Sports Editor ...	J. O. Smith
Art Director ...	C. M. Hussell
Late News Editor ...	D. I. Williams
Sales Manager ...	P. H. Moore
Asst. Sales Manager ...	Miss A. Taylor
Advertising Manager ...	C. I. Jones
Editorial Assistant ...	C. C. A. Bagnall
Cartoonists ...	B. J. Bull, R. Reeves

Illustrated Imperial News Guide to Personalities in Town and around

Rank Swirling and Polo Mint the celebrated amateur aviators touched down in Princes Gardens last night.

Brave Stetson, an Irish cowboy, and manager of the large I.C.U. Ranch and his disorganised organiser L. Fergusson Messey are attending the International Cattle-mens Convention, which is being held in the Royal Geographical Hall.

Sir Tony Belly, the Shakespearian actor, and Idle Gravity, a panto-mine clown, are appearing in a charity concert in aid of blood donors.

Dr. Kentish Weald, the wizard financier, together with George Tuesday his assistant are rumoured to be investing in the Hogg Gilt Edged shares.

Mrs. Cobb, an equestrian, who has been successfully riding her gelding "Union" for several years has just won the "London Transport Pot."

Mr. Untyed, the leader of the obscure student body known as the Thetas will be arriving in London from Dartmoor tomorrow.

Mr. Smoother Combes, the leader of the popularly known "Mocker" set, arrived at the refectory wearing a Robin Hood hat, and thigh boots in polished steel.

The S.S. "Driftwood" captained by Sir Robert Falcon Falcon Scooter, and managed by Carl Overboard, the domestic pursar, has recently returned from an expedition to Selkirk Island.

Dr. Canister Canprune, that misguided philosopher, and Sincere Badlad his comrade at arms, are said to be worried by "hall-girls."

Any resemblance to living characters, however slight is purely accidental.

SHORTCUTT

FELIX - A REPLY

This article is written for Felix since comments published in the 198th and 199th issues clearly require that certain members of the Board of Directors should give some account of their actions.

Mr. Combes lives within a few yards of me in Beit Hall. His editorial in the 199th Felix must have been in existence in manuscript or proof form for at least a week. I had no knowledge of it until to-day, Wednesday, which was effectively too late to meet the copy deadline for the 200th edition. I have therefore made arrangements directly with the printers to have this statement type-set.

There has not been sufficient time to consult other members of the Felix board and this must therefore be taken as a personal view. Neither have I had time to check certain factual information.

DAVE WATSON I.C.U. President writes

WHAT ACTUALLY DID HAPPEN

Felix is "The Newspaper of Imperial College Union" (though this is no longer stated on the title page.) It has been developed as such by generations of I.C. students. Last year it broke even financially so there is no insuperable barrier to any group of people publishing an alternative.

The Felix Board takes the view that the reporting of Union activities is essential to the Union, especially in view of the College's increasing size and diversification. If Felix did not exist, it would be necessary to create it.

A series of occasions have arisen in which relevant material was not published. This happened last term (e.g. the Boat Races on Morphy Day and the Swimming Gala) and there were several incidences in which such material was rejected in Felix number 198:—

1. Carnival News: The Carnival cannot succeed without publicity. (Subsequently published)
2. The Account of the "European Week" in Paris. (Subsequently published along with a letter of protest.)
3. A report of a Council meeting. The Union cannot exist as a democratic institution unless it is subjected to independent criticism. If Council is a waste of time, it must be seen to be so.

At the Board meeting, the Edi-

tor was asked after a vote of five in favour and two against (Mr. Combes and myself abstaining) to attempt to "improve" the situation in future. Judging by the following edition the Editor has complied with this request and one would have thought the matter ended there.

"THE HOLY BLISSFUL MARTYR"

However, Mr. Combes has seen fit to publish an editorial which contains the clear implication that an attempt has been made by the Felix board to limit his freedom of comment. I wish to deny this categorically. In my view any such attempt would have been quite improper. The attitude which the Board adopted was entirely in accord with Mr. Massey's comment "print what you like, but you must report . . . (these things)."

Mr. Combes sees himself cast in the role of martyr to the principle of freedom of the Press, with myself and Les Massey as the principal persecutors. This allegation is of such a nature that we feel there is only one course of action remaining. We intend to table at motion at the Union meeting on Feb. 18th so that both sides can be heard in full and in the open, and the Union can decide the issue. Mr. Combes, no less than the President and Secretary, is entitled to a full hearing from the student body to whom we are all responsible.



Recently, knowing that I was going to write this letter, I asked a group of faithful Church folks, "What do you think of when I say LENT?"

Three things came to their minds: (i) Forty days, (ii) denying yourself something, (iii) a preparation for Easter. It was a long time before the period of forty days was accepted as the length of Lent, and at first there was no connection whatever with our Lord's period in the wilderness. Secondly it was originally not a preparation for Easter, but for what happened at Easter—Baptism, Confirmation and First Communion. The preparation was for a fuller life with God. The emphasis at first was not on doing without, but on training for the new life of worship, work and witness on which they would embark as they came out of the waters of Baptism. They were sealed with the gift of the Holy Spirit by the laying on of hands, received the Bread of Life, and went out to live this new life within them in God's world. It was all positive, constructive; not negative.

Lent to be worthwhile must be positive: the emphasis on what you do, rather than on what you don't do. It is a special effort with a purpose—that we can enter more fully into the Resurrection life of Jesus. That Resurrection life is for the whole of man—body, mind and spirit—so any effort in Lent must involve all three. So (i) we should make a deeper offering of our physical life to God. Most of us are far too indulgent in this part of our life, and let our body rule us. To discipline our body make some act of self-denial, so that we train the body to be the obedient servant of our will and not the master of our actions. Some indulgence surrendered:—fewer cigarettes smoked, and the money given for the hungry; fewer pints of beer, so that we can get that land-rover rolling in Chidya. These are proven helps in self-mastery as far as our physical life is concerned. But the more constructive thing is ALSO to go beyond this and seek day by day to glorify God in our bodies. In an age of sexual indulgence, in the cult of cosiness, we Christians are to rejoice in our physical life and to see the living of it as a way of adoring God. (ii) We need to glorify God with our minds, entering more and more into the knowledge of what God is like and what His purpose is for ourselves and the world. This means reading one book on the Christian Faith during Lent and making time to take your part in some course of instruction, school of prayer, or discussion group: (iii) It means the whole of self goes out to ever-deeper union with God. A Retreat should be a normal thing for Christians during Lent, and in your prayer time daily more adoration of God and more waiting on God.

So a happy Lent to you.

JOHN SHAND, S.S.J.E.

IS SELF SACRIFICE A MISCONCEPTION

The True Meaning of Lent

At this time one is constantly hearing the question "what are you giving up for Lent?" It is rather unfortunate that Lent has come to be associated with this form of self sacrifice. This is most certainly how the Reformers, who set out the prayer book, did not mean it to be used.

In the Bible there is no reference whatever to such a period, and it is believed that it came into being some centuries after the Church had been founded. At the time of the Reformation, those concerned re-

tained it, as it was a period which could usefully be employed as a time during which Christians could look forward to Easter. Hence by prayer and fasting with study of the scriptures they could focus their attention on this, the greatest event in this World's history—the death and resurrection of Jesus Christ.

This fasting and prayer is a custom dating back to the early Church, and meant complete abstinence from food and drink in order to spend the whole time in prayer with God. It generally lasted only for one day and at the

very most for three; nowhere in scripture are we told to fast for forty days or to make efforts of self sacrifice. The only sacrifice asked of us being that of our whole lives in His service.

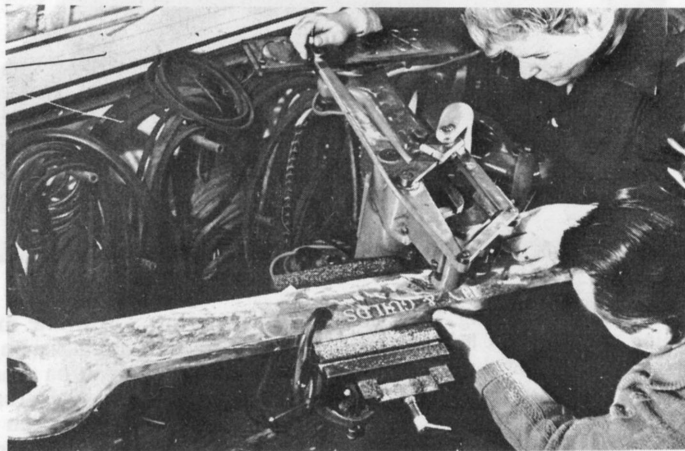
Should any further proof be required, then Paul in his letter to Colossians chapter 2, verse 16 to chapter 3, verse 4 answers a problem which is remarkably similar to this one of Lent.

M. BAILEY,
(Sec. I.C.C.U.)

Spannerama

SPORT AND THOUGHT

This year marks a very important stage in the development and future of Guilds. Most of the engineering departments have been relocated in new buildings, and many of the students have taken up residence in the Southside Halls. Soon there will be well over 2,000 students in Guilds, and of these, over half will be postgraduates. There is already a change in Guilds-feeling, which has showed itself in the various attitudes of the expanding numbers of "Active-Guildsmen." Matters of importance are being dealt with on the Guilds Union floor, and attempts are being made to integrate the Sport and Thought elements of Guilds Life, so that the two can co-exist without unbalance. The beer mug has gone back on the shelf, but it is still an element in Guilds Union life as a social integrator. See a friend over the rim, even if the post is full of orange.



Freshers Dinners

The Freshers' Dinners of old were not the best way of introducing student to staff. The more ordered dinners this year were a little nearer the formula needed. The loss of Spanner showed how Southside opening has bolstered Guilds spirit in the resident Guildsman. The ring of twenty chairs awaiting telephoned progress reports; the ring of coffee cup stain on a broken cipher clue; the code solving on departmental blackboards; the loaded cars to remote destinations . . . and Dartmoor. Morphy Day was a mess due to lack of liaison between the other constituent colleges. Almost all the organisation was left to Guilds, but we did not receive the assistance of the others, and so chaos reigned for a short while. R.C.S. and Mines did not have the slightest idea as to what was happening. They were unprepared, and were it not for the Loudhailer that Guilds hired, the return journey would have been a disaster.

Pedal Car Race

An indication of the "Go" in Guilds was given by the carol singing collection. Over £100 was collected in under four hours. £25 was raised for the Mental Health campaign by auctioning a car. Newly formed groups of Guildsmen are doing new things. The Bristol pedal car race will see the result of the labours of one such group, in the newly designed pedal cars being built by mechanical engineering students. The Radio Society is showing great enterprise in the

television broadcasting system that they are developing around the television camera that was given them by I.T.A.

Not Theatrical Performances

The various Engineering societies have very varied programmes set out for the session, but often bad publicity for these events lets them down. Mid-day Eng. Soc. meetings are an innovation this year, but the Faber Prize even has been poor, there being only one entry by the closing date. The Guilds Aeronautical Engineering Society has been formed this year for Aeronautical students, and they are already organising a Seminar in this College for European Students, to take place this summer. In the past, Union meetings have played to packed houses. This is wrong. Union meetings should not be theatrical performances, they should be a forum for student discussion from the floor, and a means of communicating details of Union activities to the standard Guildsman. These may be put over in a lively way, but it should be possible for serious debate to take place without a monster explosion, or a barrage of chalk at the speaker. This year has seen changes in the format of Union meetings, just as there have been changes in other parts of Guilds. We must never lose the "Sport" side of our Union; beer is most essential as a social equaliser, but we must not bias another pint; active discussion over the full gamut of student interests is essential. But who is to balance?

dear sir...

Dear Sir,

Whilst appreciating the need for more political activity within I.C. and realizing the wants of the right-wing fanatics for more pre-election vote getters. I nevertheless feel that a recent pamphlet circulating in College has gone too far. I refer, of course, to the booklet entitled "Keep Right With God" which has recently been displayed in South Side. This form of insidious propaganda must be stamped out immediately! perhaps its proponents may next appeal to higher authority, even "Keep Right With Watson" might appear. Let us unite and stamp out this menace to our democratic society.

HARRY.

(Civil Engineering III)

Dear Sir,

In the last Felix you reported on the Engineer's Dinner Dance held on January 24th. This is the formal gathering of our College Union and is considered by many to be the best in the I.C. calendar. This year, the function was again enjoyed by all and one hopes successful. Your title to the article, "The Engineer's Boozep-up" is therefore incorrect and insulting.

I would be grateful if in future you use titles of greater accuracy and less sensationalism.

Yours faithfully,

ROBERT C. SCHROTER,
City and Guilds College Union.

Ed: Apologies for misrepresentation of what was most certainly a successful event.

JAZZ CLUB NEWS

This week's prize statement comes from Mr. Peter Clayton, who, judging the I.U.J.F. Competition in Birmingham, said "Some people like Asparagus, but I don't." Congratulations to you, Mr. C. Your prize, which will be sent to you from OXFAM, is 1 ton of Rice.

Last week an old lady from Bayswater wrote to me to say that she enjoyed the last South Side Stomp, but regretted that she had to open her windows to hear the quieter numbers. I'm sure that won't be necessary this week. Tonight's Stomp (12th) features once again that chart-topping group, The Shadies, whose current disc has climbed rapidly to 2,741 in the American Hit Parade, and is doing well in Singapore.

Also on the Bill, by popular request, is the I.C. Big Band, whose leader, Ken Gibson, wants you to know that he loves asparagus madly. Late night jazz will be served (on ice) by The Clive Heath Quartet.

A two shillings bribe will be enough to get a FREE ticket for tonight, if there is room to get in.

Dear Sir,

As fully fledged and almost flown ICW Arians, we read with interest and became increasingly fluffed up about the contents of "Birdsnest" in the last batch of Felix.

Having had no complaints about our appearance or lack of femininity in the last two and a half years, we feel that our "lecture kit" has been adequate and in most cases pleasing. We beg to suggest that the "with-it chick" takes more detailed observation of her fellow birds.

Yours broodingly.

Stonechat, Whinchat,
and Backchat.

Dear Sir,

Although it is indeed a great honour to be mentioned by Mr. Colcutt, I would like to make it clear that my comments on I.C. Union in 1999 A.D. were intended to be not bitter but light-hearted. It seems unfortunate that any attempt to treat the Union with the humour it deserves should immediately be misconstrued.

Yours faithfully,

PAUL ROGERS
(Botany III)

Dear Sir,

In defence both of my integrity and my policies, I would like to point out that a piece of friendly advice from our Rector can in no way be considered as censorship. I will say no more; the vulgar publicity to which my allegorical writings have been subjected pains me more than words can convey.

Yours faithfully,

W. J. McAuley.

Editor of Phoenix

Beit Hall

February 5th, 1964

FILM SOCIETY

Birth of a Nation

Fifty years ago D. W. Griffith started shooting his first epic picture, "Birth of a Nation." This film, concerned with the history of the United States of America, is now treasured as an example of a forgotten art, that of the silent film. Not merely did Griffith establish the claims of the cinema to be art but he challenged the supremacy of the theatre and presented it with a serious rival.

In 1915 "Birth of a Nation" ran for forty-four consecutive weeks in New York. Unfortunately we can only show it on one day, Friday, February 14th. The film will be presented with an authentic 1915 piano accompaniment at 7 p.m. in Room 342, Mech. Eng. The pianist will be Mr. Arthur Dulay from the National Film Theatre.

ELECTRICAL ENGINEERING SUPPLEMENT

The Department of Electrical Engineering

BY SIR WILLIS JACKSON

This is, perhaps, a permissible occasion on which to blow a trumpet for electrical engineering. The various branches of it are now affording employment to about one million people; the annual value of its manufactured products is approaching £1,000 million and, of these products, over £300 million worth are being exported.

The past 25 years or so have seen the emergence of a world wide system of telecommunications; of television and radar; of the electronic digital computer and of automation; of a wide range of solid state devices, of which the transistor is outstanding; of commercial forms of such scientific instruments as the electron microscope, the mass spectrometer and the particle accelerator; and of fusion-type nuclear power stations.

Alongside these brand new developments there have also been considerable improvements in previously well-established fields. For example, since 1948 the size of steam-turbine driven electrical generator units has risen from 30 to 500 megawatts; the overall thermal efficiency has increased from 27.6 to 39.2 per cent; and the capital cost of the total installation per kilowatt sent out has decreased from £67 to £35.

We must now say that these and other achievements which might be mentioned are only to be credited in part to electrical engineers. They are, in fact, the result in varying degrees of co-operation between electrical engineers and physicists, chemists, mathematicians, metallurgists and civil, mechanical, chemical and aeronautical engineers. Indeed, the pursuit of electrical engineering is by no means an activity merely of men who call themselves electrical engineers, but of teams of representatives of a diversity of scientific and technological disciplines, to which must also be added the contributions of members of other professional persuasions such as economics, law, sociology, etc.

It is the job of the Electrical Engineering Department to prepare its undergraduate and postgraduate students for participation in this broadly-based partnership. We should be claiming too much were we to pretend that we yet know how best to do this, since we are involved in a rapidly changing scientific, technological and sociological situation. What we can claim, however, is that we are conscious of the need for con-

tinuous re-appraisal of our undergraduate and postgraduate curricula and that we are now deeply engaged in this; and that we are trying a variety of experiments in an attempt to improve the techniques of lecturing and tutorial work. For example, the whole of our new building has now been wired for closed-circuit television to enable demonstrations to be televised from laboratories to lecture-rooms, and other unconventional teaching techniques are also being investigated.



In addition, we are experimenting with the incorporation of courses aimed at opening the minds of our undergraduates to the humanistic aspects of engineering work, and to the social consequences and implications of its progress. The fact that not all our students seem yet to be wholly "with us" in some of these experiments is unlikely to deter us from our continued attempt to prepare them more effectively for their later careers and for life.

We have now been in our new high block building for about eighteen months and, on the whole, are very pleased with it. Its total population of teaching, technical and secretarial staff, and of undergraduate and postgraduate students, is well over 400, and the further growth arising from the implementation of the Robbins Report—combined with our undertaking to house the College Computing Centre—promise to produce a tight situation much earlier than was envisaged when the building was planned only seven or eight years ago.

As with other Departments, our main difficulty is likely to be that of acquiring a sufficient number of new staff members of high quality, partly to deal with the expanding student numbers and partly to replace those who gain

promotion elsewhere or who go overseas on secondment to teach in the engineering schools of the developing countries. In the latter connection, one of our staff—Mr. J. C. Carpenter—has been serving as Professor of Electrical Engineering in the University of the West Indies for the past two years. He will be rejoining us in October next, but by then Mr. R. A. King may have commenced a three-year secondment as Professor of Control Engineering to the Indian Institute of Technology in Delhi—with which Imperial College has established a "Sisterhood" relationship—as also will one of the most experienced of our technical staff, Mr. A. A. White, who will serve as electrical supervisor to the Institute at Delhi. The Department attaches great importance to this kind of overseas service, and is determined to extend it wherever circumstances permit.

The designation of Imperial College as a S.I.S.T.E.R. (Special Institution for Scientific and Technological Education and Research) by the Robbins Committee adds emphasis to the national importance of the College's contribution at the postgraduate level. With a view to strengthening our own contribution in this respect we are seeking to attach to the staff of the Department as Special Lecturers an increasing number of outstanding practicing electrical engineers. This session we are in the fortunate position that two industrial concerns have seconded senior staff members to us on a half-time basis, and in addition a member of the Electricity Council, the head of the Post Office Research Station, and a senior engineer of the British Transport Commission are giving invaluable help as part-time lecturers and organisers of postgraduate symposia in their special fields.

Some exciting new prospects of electrical engineering development are in the pipeline. A variety of new solid state devices, illustrated by the maser and the laser, may soon become of considerable technological importance; it may not be long before low-temperature physics enters the domain of power engineering as well as that of the computer; while rapidly increasing effort is being devoted to several new possibilities of large-scale electrical power generation employing thermionic, thermoelectric, magnetohydrodynamic and thermo-nuclear processes.

The translation of these prospects into efficient, reliable and economic devices and equipment will involve the resolution of engineering problems at least as difficult and as intellectually searching as the scientific ones being investigated. It is up to us to ensure that the student products of the City and Guilds are fully capable of resolving them.

ENGINEERING IN MEDICINE

Engineering in Medicine is a new group in the Electrical Department, which was set up to fulfil the joint functions of postgraduate training and research.

Postgraduate Training

The training is intended mainly for experienced graduates in medicine and biology normally engaged in research and clinical analysis who receive here a year's intensive instruction in the principles and use of electronic and mechanical apparatus, and a thorough understanding of modern physical and mathematical techniques relevant to their work. A considerable amount of inter-departmental co-operation is involved in providing this training and specialized lecturers from medical research institutes also contribute.

The nine students taking the course this year come from Britain, Canada, Italy and Portugal. All but two hold higher degrees and have already done much research. Five are medically qualified and two are physiologists, one is qualified in mechanical engineering and physics, and the last has a mechanical engineering degree and has been working on artificial limbs. Others among the students have previously been doing research on such subjects as the application of fluid flow to circulation in the kidneys; the bio-chemistry of anaesthetics; the chemistry of drugs, particularly in their effects on processes in the brain; and aviation medicine.

Although the students attend over 200 lectures, the main part of the course is laboratory work which is closely supervised by the staff in the group. In the second half of the year each student undertakes an original experimental project, which is chosen to suit his special interests, and on which he will finally write a full report.

Research

The research section of the group deals mainly with investigating brain and nerve processes, and with instrumentation. An interesting problem being tackled is to find out how the human brain constructs an integrated picture of the external world by combining the separate evidence from the senses of sight, hearing and touch. One of the research students is investigating a simplified form of this problem involving only sight and hearing. A subject learns to track an acoustic image, and studies are made of the influence on his judgements about image position of aiding or conflicting information from a secondary, visual, image. The results of these experiments may give insight into how we build up a picture of the world around us.

RESEARCH SECTIONS

COMMUNICATIONS

The transmission of information has long been a problem of interest to electrical engineers. In the early days research workers were concerned almost entirely with the then formidable task of making devices that worked. Today this emphasis on hardware alone is receding and engineers are taking a much broader view of communication problems.

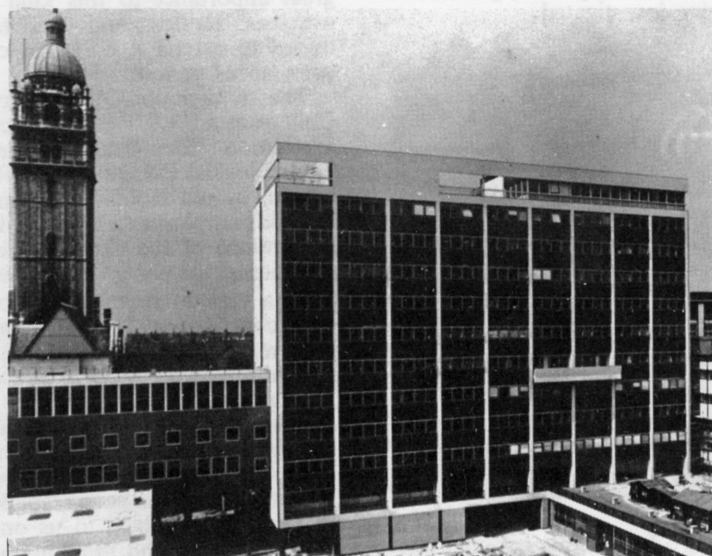
One field of research in his laboratory that has captured attention is Psycho-acoustics, which is concerned with the measurement of aural perception. The sudden interest in this subject stems from the work of Claude E. Shannon ("The Mathematical Theory of Communications," 1948), which brought about the realization that present methods of communication are monstrously inefficient. For instance, according to Shannon's theory, one telephone line can do the work of a hundred, provided the speech signals are suitably coded. Practically, a tenfold improvement is envisaged. The most promising approach to date concerns itself with finding out which parameters of sound are important to the human listener, the implication being that once we know this we need only transmit information which is relevant for perception and omit the rest.

An investigation of the phenomenon of binaural fusion has yielded results which point the way to improvements in practical telephone systems. It has been established that a very small time difference and/or amplitude difference between the signals arriving at each ear are the primary physical variables enabling us to perceive the direction of a sound source. Further experiments have shown, for example, that if two sounds are spatially far apart then it is easier to concentrate on one or other of the sounds. On the basis of this a scheme has been developed using binaural techniques whereby the wanted speech sound and the unwanted noise in a telephone channel are each given different apparent positions. This makes it easier for the listener to concentrate on the wanted message, resulting in improved intelligibility.

Other work in the Laboratory is concerned with the perception of short bursts of sound, the perception of moving sounds, and with the factors influencing the formation of a single sound with stimuli from two separate sources. Work is also being carried out in the perception of sharp contours on a noisy television screen, as well as a scheme for scaling the quality of television pictures produced by a bandwidth compression scheme: although the latter is unlikely to be significant for broadcasting purposes, several

interested industrial organizations are studying its possible applications in other directions.

In the course of tackling the above problems new techniques have been evolved and many of these have been of interest to workers in other fields. Similarly many of the methods applied in the Communications Laboratory originate from apparently unrelated disciplines such, for example, as Quality Control or Mental Test Theory. There are many who speculate on the superficial nature of inter-disciplinary barriers. This Laboratory provides an example of just how superficial some of these barriers are.



DEPARTMENT OF ELECTRICAL ENGINEERING

HIGH BLOCK

- 12 MICROWAVE LABORATORIES
- 11 COMMUNICATIONS LABORATORIES
- 10 ELECTRON PHYSICS LABORATORIES
- 9 CONTROL SYSTEMS LABORATORIES
- 8 POWER SYSTEMS & ENGINEERING IN MEDICINE LABS.
- 7 MATERIALS LABORATORIES
- 6 ADMINISTRATION, LIBRARY, COMMON ROOM
- 5 3rd YEAR STUDY & LIGHT CURRENT LAB.
- 4 LECTURE THEATRE, ELECTRONIC WORKSHOP
- 3 2nd YEAR STUDY & LIGHT CURRENT LAB.
- 2 MAINTENANCE WORKSHOP, ENTRANCE HALL

Apron Floor

- 1 HEAVY ELECTRICAL LABS. DEPT. WORKSHOP

MATERIALS

This academic year has seen the beginning of an interdepartmental "Science of Materials" course at I.C. in which Electrical Engineering Department is a participant. Its aim is to provide an introduction to theoretical and engineering aspects of materials. Projects undertaken in third terms lead to a D.I.C.

Research

The research interests of the Materials Section are centred on investigation and development of materials with potential technological importance. There are three main groups:

- (1) Magnetic materials.
- (2) Semiconductors
- (3) Thin films and surface studies.

Magnetic Materials

Three years ago the first reports were made of the observation of the magneto-electric effect. Materials showing the effect are capable of magnetization by the application of an electric field. Whilst the effect is small it is of potential importance in, for example, the thermionic generator since a standing electric field could be produced simply by putting a permanent magnet around the device. A related

effect has been termed the piezomagnetic effect, through which a specimen becomes magnetized when stressed mechanically. This has recently been discussed as a possible basis for the prediction of earthquakes. The Materials Section is investigating the effects with the hope of finding new materials with improved properties.

Research is also being carried out on the shape dependence of magnetostriction in standard magnetic materials.

Semiconductors

Work on semiconductors includes a number of basic physical investigations, noticeably measurement of carrier lifetime which has direct relevance to transistor performance. In addition, new intermetallic semiconductor materials are being synthesised for application to thermomagnetic refrigeration using the Ettings-

hausen effect. This project is a joint one with the British Oxygen Company aimed at producing a low-temperature refrigerator.

Thin Films

The thin films and surface studies group is concerned with the properties of metals and semiconductors in thin-film form. A study of the magnetic properties of thin nickel films is being undertaken with the co-operation of International Computers and Tabulators Ltd. Mr. D. S. Campbell, of the Plessey Company, who is a visiting Lecturer in the Section, is supervising other thin-film resistors and capacitors.

Studies of germanium in thin-film form are aimed at determining the influence of mechanical structure on electrical properties. This has importance in the present considerable effort being put into the development of a thin-film active device.

A mass spectrometer analyser is being used to investigate the exchange kinetics between a gas adsorbed on the surface of a transition metal film and its free isotope.

Further work has been initiated on the electrical properties of uranium dioxide and on slow-electron diffraction.

Electrical Power systems and machines

The economic progress and development of any country depends upon the availability of a cheap and abundant source of power. In most countries, electrical energy provides this source and requires that the generation, transmission and distribution of electricity continually expands to meet the ever-growing demands of the consumer. Most countries now double their total demand for electricity every seven to ten years. Consequently, electrical engineering must progress at an equal rate to enable new and more efficient power stations to be commissioned and a transmission or grid network to be built which will ensure adequate supplies at

reasonable cost without too much despoilation of the countryside.

Many problems are continually arising in this ever-expanding supply industry, and to study some of the basic problems involved, models of power system networks have been built in the Power Systems and Machines Laboratories of the Department. Small electrical machines are used to simulate large turbo or hydro generators, transmission and distribution networks are constructed from resistors, inductors and capacitors, and the consumer is represented by loads which can be made to behave in characteristic fashion. A model of particular interest is that of a direct current system which can be used with the more usual a.c. system model to study the possibilities and problems involved when this form of transmission is employed for cable routes, such as, the Cross Channel connection between England and France. High voltage d.c. transmission when fully developed will enable economic undergrounding of overhead lines, producing a solution to the amenity problem which is obviously desired in this country.

Cont. on p. 7, col. 1

Research sections(cont)

POWER & MACHINES *Cont*

One problem which is receiving much attention is that of the control of the power system network. When a fault or short-circuit occurs on the system causing a line or generator to trip out of circuit, the resultant redistribution of power may cause other lines and generators to overload, thus precipitating cascade effects which can cause blackouts over large areas. In these circumstances, the traditional means of communication and control, exercised by control engineers by telephone, cannot always operate with sufficient speed to avert serious disturbance and, in the extreme case, disaster.

In the future, it will be neces-

sary for large power systems, as, for example, the British Grid System, to be operated by centralised computer control. System data will be telemetered to the control computer which will perform optimising calculations and issue instructions to satellite computers, which will, in turn, perform the necessary control functions on the generators, turbines and transmission system. In the laboratory a variety of control techniques are being studied and assessed and new techniques are being developed in order to arrive at a generalised philosophy of automatic control for such systems.

AUTOMATIC CONTROL SYSTEM

The Automatic Control Section is responsible for teaching automatic control techniques and the philosophy that underlies their application throughout the College, both at undergraduate and postgraduate levels. It runs a one-year postgraduate course which is the most advanced of its kind in this country. The group also engages in researches on automatic control, seeking to put the subject on a proper scientific basis and to extend our knowledge on how to apply these techniques to the control of industrial processes. In doing this, extensive use is made of digital computers and work has just started on four-year programme of research in which use will be made of a large-scale digital computer (Atlas) for direct control of some difficult industrial processes.

In undertaking this very general research investigation it is our intention to continuously seek favourable industrial contexts for the work and it is pleasing to be able to report our continued collaboration and support from five industries with whom we are associated on specific projects, as follows:—

Central Electricity Generating Board (Electricity Supply)

We are investigating the possibilities of applying optimal methods to on-line use of digital computers for adaptive control of a sizeable power system. The problem of economic scheduling of power generation to meet a given load demand while satisfying a power limit and limited rate of rise of power has been investigated. The problem of optimal frequency control is also being investigated.

Royal Aircraft Establishment (Aerospace)

We are investigating the optimal control of a homing missile ending on a terminal-time criterion where the terminal time is not accurately known; and also when

the information received by the missile of the target position is incomplete, noisy and non-linear. *United Kingdom Atomic Energy Authority and National Institute for Research into Nuclear Science (Nuclear Power)*

With the UKAEA we are having discussions on the possibility of direct computer control of a nuclear reactor and with NIRS we are engaged on studies of the optimal control of a linear accelerator associated with NIMROD, the high-energy proton accelerator.

British Iron and Steel Research Association (Steel Industry)

We are, in collaboration, making a general study of non-contact speed measurement utilizing correlation methods. The first method being investigated is a photo-electric one and arising from this we are making a fundamental study of the reflection of light from moving surfaces and the implications that this will have on the form of the optical system required for successful correlation analysis.

National Physical Laboratory (Chemical Process Control)

We are collaborating on the optimal control of a pilot-scale process. This is a small-scale distillation column which has been set up by the NPL for the purposes of evaluating certain optimisation techniques. The effort will be devoted initially to the plant-modelling problem and later to the application of optimal-control techniques.

Other problems being studied which have an industrial interest include a study of the boiler start-up problem; the influence of queue discipline on traffic control; the development of a high-speed data link to Atlas using a television co-axial cable; and automatic hill-climbing devices for maintaining maximum efficiency in plant under varying disturbance and load conditions.

PROFESSOR TUSTIN

A PROFILE

Professor Tustin began his industrial career some fifty years ago, at the age of sixteen, as an apprentice with Charles Parsons Limited. At that time the firm was engaged in the development of the steam turbine, and Professor Tustin spent much of his time removing the irregularities from steel castings with a cold chisel and hammer, because modern abrasives were not known in those days. The workshop was dark, dirty and unpleasant, littered with thrown away food and rubbish, and ridden with rats and fleas. When the men started work at six o'clock in the morning, sunlight only penetrated the grimy windows where the panes were broken.



Professor Tustin has spent two extended periods abroad in dramatically different countries — Russia and the U.S.A. He went to Russia in 1932 (when the British Traction Industry was at a standstill) to work at the Moscow Traction Works, where he joined a group of engineers, several of them from other countries. At that time they were building the Moscow Underground Railway and were electrifying the main line from Moscow. Professor Tustin was much impressed by the enthusiasm and determination which alone achieved success at a time when there was a shortage of everyday commodities, even of paper to write on. He believes this determination and perseverance to be responsible for the rapid growth of Russia's technology to the outstanding level of achievement he saw when he returned there for a short time in 1960.

During the war Professor Tustin was involved in the development of automatic control, particularly automatic gun-laying and gyroscopic stabilisation. Soon after the war he was appointed Head of the Department of Electrical Engineering at the University of Birmingham.

Professor Tustin has also been to the U.S.A. as a visiting professor at the M.I.T. in 1955, which gave him the valuable opportunity of assessing American technical education. Of American research, he says that sometimes so much time is spent installing and manipulating elaborate apparatus that not enough thought is given to the work being carried out. However, the resources of men and money are so great that this fault has not been very important.

Shortly after he returned to England, Professor Tustin became Head of the Electrical Engineering Department at Imperial College—a position which he held until the return of Sir Willis Jackson. Professor Tustin welcomed his release from the administration which had curtailed his other activities. Since then, although much of his time has still been taken up with problems concerned with the expansion of the Department and admission of students, he has been able to devote more time to work in the heavy electrical engineering field such as energy losses in electrical machines, and economic aspects of engineering.

When he retires from the College in October next Professor Tustin will be able to look back on a long and useful career in industry and teaching. But retirement will not mean the end of his contribution to science, as it will enable him to devote more time to his other interests, one of which is electrical phenomena in the brain. His own fertile brain will ensure that he does not lack absorbing problems in his retirement.

P.G. ACTIVITY

Various sections of the Department have been organising lectures and seminars during the year. Professor Cherry presented a series of meetings on "Social Aspects of Communication" and Mr. Cory has presented a weekly seminar on "Broader Aspects of Electricity Supply." In addition meetings are held four or five times a term in which Staff and P.G.s can meet informally over drinks and discuss some topic of current or general interest. This term, for example, Sir Willis Jackson has talked about engineering and politics in Africa; Professor Tustin has given his personal impressions of the Slump and discussed how such disasters can be avoided in the future; a Ghanaian P.G. will later be talking about some problems in his country. Gradually a picture is being built up of the engineer in a world of people. Experiment constantly takes place to ensure that both engineering and people receive due attention in the education the Department is seeking to provide, for engineering exists to serve people and a university department should lead the way in trying to understand both.

BROADER EDUCATION

OUR EXPERIMENTS

IN BROADER EDUCATION

Second Year Electrical Engineering Students have been heard talking to their friends about Cargo Cults, Kinship Groups, Cabinet Dictatorship, Utopography, Nazi Propaganda and other non-electrical subjects. What's going on?

Four courses are being offered to the class this year—Humanities, Social Anthropology, Politics and Psychology. Together these courses aim to probe questions which are of interest to intelligent citizens in general and to technologists in particular. The courses are neither a cultural sheep-dip nor a dose of cabbage water. Their main function is porridge-stirring. Seeking to raise fundamental questions about human society and the individual, they are designed to draw attention to some of the social and political consequences of technology, and to take a penetrating look at some basic artistic and humanist values. They are also intended to provide introductions to the various fields of thought which they represent.

Humanities

Mr. Goodlad's course in the "Humanities" has the twin aims of providing a literary commentary on certain important 20th Century events, and of introducing techniques of criticism. Chalk and talk recounting of history has been avoided, and the course has concentrated on giving "worm's eye views" of the subjects covered; it has sought to examine what has been going on through the eyes of writers of literature, while films and select reading lists have offered the broader picture to those interested. The First World War, for example, was seen through the eyes of some of the War Poets—Owen, Sassoon, Brooke—and through the memoirs of such writers as Robert Graves, Edmund Blunden and Vera Brittain. The Great Depression was examined through the eyes of Orwell, Priestley, Greenwood, Spender and Steinbeck, as well as through some of the social surveys of the period which sought to bring the plight of the unemployed to public notice. A similar technique is being followed with the Spanish Civil War and the Second World War.

The "worm's eye" technique aims not only to show what the cataclysmic events of this century meant to the articulate layman, but also to distinguish the marks of excellence in the various literary genre—poetry, novels, essays, plays. A lecture on propaganda as used in the two World Wars was followed by discussion of the propagandist aims of certain novelists, in particular the writers of Utopias and anti-Utopias.

Ideas and techniques of presenting ideas received equal attention. Again, the current discussion of drama aims not only to show the dramatists' ideas, but to analyse the effectiveness of various types of drama as vehicles for ideas.

Politics

The Introduction to Politics, presented by Mr. K. Minogue and Mr. Robert McKenzie of LSE, has added a further dimension to the coverage of 20th Century events. Mr. McKenzie took the lid off the British political scene, exposing the fallacies of some current beliefs about the operation of the parties. Mr. Minogue probed the very basis of the democratic system, analysing the nature of government and the attempts of the liberal states to limit individual power by placing legislative executive and judicial power in different hands. By way of contrast, Mr. Minogue gave a thorough analysis of modern totalitarianism, drawing material from Stalinist Russia and Nazi Germany. Examining the affinity to religion of the official ideologies, he drew parallels with certain millennial movements that have arisen from time to time in the world, often as a result of rapid social change. This social change may in turn be the result of rapid technological change. This was a subject dwelt on by Dr. Benedict in his course introducing

Social Anthropology

Dr. Benedict also drew attention to the impact of technology on primitive societies, and explained the function of millennial movements and cults—U.S. Ghost dancers, Cargo Cults in the Pacific etc.—in restructuring the social relationships damaged by rapid technological change. In his scholarly examination of group behaviour and its possible causes, Dr. Benedict had occasion to dwell on many subjects of intense interest to the socially conscious engineer—the concept of Race, and the causes of Race prejudice; the effect of environment on behaviour, such as territoriality, social rank and hierarchy; the importance of kinship in social groupings, and the varieties of good antidote to the English-ethical and social behaviour, (a man's belief that the customs of his nation are the laws of nature); the definition and importance of social status.

Psychology

This fourth course, given by Mr. Price-Williams of LSE, promises to push the study of human behaviour as far as academic method can. The first three courses have shown groups of humans trying to organise themselves, blasting each other to pieces, planning Utopias, wor-

shipping strange gods in the stress brought about by technological change—they have shown the prophets and politicians trying to manipulate the lives of their peers through persuasion in novels, plays, tracts, broadcasts, films, through sham democracy and with machine-guns and bombs. Mr. Price-Williams, drawing the veil from a strange world of rats running through cages, babies smiling at broom-heads, birds building onto imaginary nests, is providing a provocative insight into how the psychologist tries to find out what makes people tick.

Sound and Fury?

These courses take up time; are they worthwhile? Do they provide anything that is not already provided in the college General Studies programme? The answers to these questions should really come from someone who is taking the courses. But it is hoped that the courses will have had value in some of the following ways:

- * By providing an ordered account of important events which everyone is assumed to know about, but which few people are taught about.
- * By providing courses of lectures backed by reading suggestions, discussion meetings, and tutorials, which can probe more deeply into a subject than an unsupported course.
- * By providing opportunities for those taking the courses to practice expressing themselves in writing and speech. In addition to group discussions, the course has included public speaking classes, and a third of the 2EE group have embarked upon projects (in anticipation of a third-year essay requirement) on a variety of subjects ranging from "The effects of TV on children's reading habits" and "The use of short wave radio in the First World War" to a study of the legend of the Cretan Minotaur. But perhaps the most important thing of all, at this stage, is the fact that the Electrical Engineering Department is refusing to ac-

cept a variety of current assumptions—the assumption that if a student shows proficiency in mathematics at the age of 15 and goes onto the Science Side at school, he thereby ends his formal contact with anything other than science and technology; the assumption that one can pick up in casual conversation a knowledge of the varied aims and motives of human beings; the assumption that study of the root causes of some of our current problems should be left to social science specialists, and that technologists should not be distracted by considerations of the possible effects of their technology on communities advanced and primitive; the assumption that engineers should not take part in government.

WAR BY WISDOM

Since this time last week, the world's population will have increased by over a million. Three-quarters of these people will be undernourished and underprivileged. The task of feeding, housing, educating, and employing these people is awesome. Technology will have a large part to play, and the solution of the problems will be easier if technologists are alive to the social and political difficulties involved. At the moment we see through a glass darkly, and the courses offered in the Electrical Department will be modified constantly in the light of experience. Some may doubt the relevance of the courses at present being offered in such a complex situation; but a frontal attack is sometimes less effective than a flanking attack. The novelist who shows the desperate condition of an unemployed factory worker, the anthropologist who shows the chaos wrought in a village community by unskillful introduction of technical devices, the political scientist who shows how quickly confused citizens turn to strange gods and stranger political systems, the psychologist who shows the a-rational desires of individuals . . . all these may encourage fruitful thought about the social situation. We hope too that they may be intellectually stimulating in other ways. This is what we mean by stirring the porridge . . . we cannot, and would not if we could, spoon feed.



COUNCIL

JAMES WALKER WRITES

Although the Council Meeting on Monday, 3rd February, lasted for 6 hours it was a great improvement on the one held the week before. Everyone had already agreed to the setting up of the position of Deputy President but there were many views on the method of election of this post and also that of the President and Secretary. After discussion all the possible permutations of elections, i.e., all three from Council to all three from the Union Floor, at some length, it was decided that the **Deputy President** alone should be elected by the **Union Members at the Annual General Meeting**.

This method has practical difficulties; for if the Deputy President also wishes to stand for President and is elected there appeared no easy solution to electing a new Deputy President. After much heated argument, during which some Council Members changed their minds over the Union Election of the Deputy President. It was decided that Council should not appoint the new Deputy President.

Felix

The Felix Board Report caused some controversy as reported in the *Late News* of our last issue. Many people on Council thought that Dave Watson had been more than a little harsh in his condemnation of Michael Combes and after an exchange between the President and Roger Henson, who raised the matter, the report was altered to congratulate Felix on financial success of this paper.

Other Matters

Among other points raised were, the opening of the Union Bar on Sunday evenings. This should happen again soon, but alas to the detriment of the mid-day customers as it may not open at midday on Sundays due to staff difficulties (robbing Peter to pay Paul?). A department of Social Studies is being set up at the College, and optional social studies will shortly be a part of every degree course. This, I suppose, is to try to change the general opinion of illiterate beer drinking engineers.

A collection of paintings is to be exhibited in advantageous positions around South Side. Another move to improve our general knowledge perhaps?

Kennedy Fund

The Council defeated by 15 votes to none a motion that the Union should organise a collection for the Kennedy Fund. This fund is to provide a scholarship for a British Graduate to study at Harvard. As a part of London's £5,000 towards the £25,000 target I.C. would have to provide £600, 4/- per student—an impossible feat. Collecting tins will be provided but there will be no high pressure salesmanship.

This is the first time that the Union Member has been able to elect a member of the Executive (except the R.C.S., C. & G., and Mines Presidents) and it marks a great step forward in the Union. A Deputy President, in charge of the Union Buildings, could do a great deal to changing most people's attitude to the Union. Queries, complaints, etc., dealt with promptly will make for better running of the Union. Let us hope that this is the beginning of a Union revival, for whatever anybody says the Union is in a bad state when so few people take advantage of the many facilities provided.

Car Parking

Bob Schroter, in his car parking report, made one very enlightening statement: **the South Side car park can be used by anyone at I.C., not just the Halls Residents.** This means that those in Hall have wasted their shillings on buying those South Side Stickers. The Car Parking Committee is looking very carefully into the need of providing parking places. To this end a questionnaire will be sent out to **everyone** at the College in the near future and **everyone** is urged to answer it in **their own interest**.

Council Quotes

"Keep your big mouths shut!" Havard of the President.

"Could you please repeat the motion on the floor."

"There is no motion on the floor."

"I'm not trying to stir."

"Complete abortion." Pete Alison on Council.

"A great improvement." Felix reporter.

COLCUTT

In his report to Council about Felix, the President delivered a harsh and unfair statement neglecting the obvious fact that this year the editor has succeeded in producing an economic and original newspaper. On the other hand Mr. Combes has sailed very close to the wind and no one would say that his editorial policy has met with universal acclaim. This academic year has seen many heated battles between Mr. Combes and the executive led by Mr. Watson. The reason for this could be the original policy of the editor or the executive's lack of experience in the production of a newspaper. It is justifiable that Mr. Combes becomes annoyed by criticisms levelled by people with no experience of Felix, on small matters such as the printers' errors, which are almost impossible to avoid or the fact that a complete financial statement cannot be produced until the end of the year, because bills in respect of advertisements and other matters are not paid till late in the year. Mr. Combes seems to be able to gauge accurately how far he can go without having to resign, but this is not always true of his staff. The whole structure and policy of Felix is so delicately poised at present, that cases of misrepresentation of fact, which have come from the pen of one of the staff, could very easily destroy the achievements of this year.

Council and the President

A recent report of council proceedings has suggested that the whole thing is a waste of time and that council members would be much better occupied elsewhere. No mention was made of the way in which council members occupy themselves at meetings, and this might be of interest. Mr. Price talks a lot and gets confused; Mr. Tye talks little but usually sense; Mr. Edwards is perpetually dissatisfied; Mr. Stocks feels; Mr. Ellis reiterates; Mr. Henson defends Felix successfully; Mr. Massey's ideas are becoming more conventional; Miss Tait draws interesting landscapes; Mr. Beadle takes notes to some purpose. Mr. Schroter is the voice of City and Guilds. It might also be in order to report some of the things which were discussed at the last meeting. The Felix board report produced sparks between Mr. Watson and Mr. Henson, who demanded its withdrawal. Unfortunately, although all the members of the Felix board were present, only Mr. Schroter and Mr. Tye dared to suggest that the President might be wrong, and asked for a comment to the fact that at least the newspaper was an economic success this year.

Mr. Watson told the meeting that if business continued after 9.0 p.m. free beer would be the order of the day and Mr. Havard

immediately saw his destiny. He was elected to the bookstall committee for his pains. Mr. Berry produced a concise report of the proceedings of ULU Presidents Council and shed light on the John F. Kennedy fund which turns out to be a very dubious proposal. Council then discussed the mode of election of the senior executive under the proposed new system, at considerable length without coming to any decision. The President was heard to comment "it's a shambles" when he left the meeting, but it is really his job to prevent a shambles. Perhaps if he controlled council meetings as he used to last term more would be achieved.

Comment

The article written under the pseudonym Cutloc is not in any way connected with this source and the information contained in it is not always as accurate as it might be.

The three motions for the Inter Collegiate Debating Competition were the work of Mr. Tony Berry. One cannot but admire the subtlety of these motions, but it is wrong for Mr. Berry to assume that there are sufficient really good debaters in the college to make use of the many opportunities presented by these topics.

To Mr. Collins of Southside who knows me quite well, I donate the following proverb which I have made up for his benefit; "Read before you write," I hope it will help him to realise who his friends are in future.

It is encouraging to see that this year's Carnival organiser has the courage to carry out his idea of buying a car as first prize for the carnival raffle. If he is successful this will be the best idea yet.

J. T. KLASHKA

HOW WOULD YOU LIKE TO BE . . .

Treed by wild buffalo in Ceylon . . . calling "taxi!" in the heart of darkest Africa . . . bivouacing in an Arctic blizzard. No one can say that the Intrepid explorers from I.C. had a dull time last summer. A record number diffused through the northern hemisphere to find adventure. Adventure that is captured by the pens of expedition members and collected together for your benefit in "Exploration Review."

Exploration Review, the annual journal of the I.C. Exploration Society, helps to show just why I.C. is held in such high esteem in the world of exploration. The best journal of its kind, it enjoys a worldwide circulation, just as our explorers do. It contains over 40 pp. of articles, accounts and photographs, well printed and produced. Out shortly, the cost is only 1s. 6d.



"AND DO YOU CONSIDER
YOUR GRANT TO BE
ENOUGH FOR A FAIR
STANDARD OF LIVING?"

TONIGHT — and other nights

To my everlasting shame I very nearly left "Tonight" during its opening week seven years ago. I can remember standing in a pub in Kensington High Street and telling the then Editor, Donald Baverstock, that I didn't think much of the programme or its chances of survival. What's more it didn't seem to be the programme which I could really enjoy doing night after night.

He persuaded me to stay for "a little while until it settles down."

That "little while" has been seven years and in that time we have produced over 1,500 programmes, filling almost 1,000 hours of television time, and we have had something in the region of ten thousand people in the studio.

We have presented the pro-

It would be idle to pretend that I have enjoyed every one of the programmes. On occasions I have been really terrified, and none more so than when we had the "snake man" C. P. J. Ionides in the studio with some of his venomous friends. He had them all in linen bags and we squatted on the floor with a few feet between us in which he was to show them off. On his head Ionides wore his battered old felt hat—"it's got enough dried venom in there to kill an army."

One by one he produced the snakes, a Gaboon Viper, the spitting cobra and aquatic snakes which he had caught by night in the light of pressure lamps. By the side of the camera a man was standing with a syringe at the ready. As one snake took the place of another on that square



gramme from Copenhagen, Venice, Brussels, Geneva and Edinburgh and when the BBC electricians had a difference of opinion with the management I presented it from a fire escape outside the studio. Our reporters have visited every continent and almost every country in the world.

So much for my programme judgement in 1957. My assessment failed in its measurement of the abilities of the team of young producers who are today the best in the business.

of floor between us so the man with the syringe changed the serum. It comforted me not one bit especially when Ionides looked at me then at the syringe man and said this snake killed the world's greatest herpetologist and there is no serum known which can help you if it does happen to catch you. I moved back.

And then came the biggest fright of all, when I asked Ionides to demonstrate how he bagged a snake with his hat.

BY CLIFF
MICHELMORE

"It's easy really" he said standing—instinctively I stood—and a split second later he dropped a viper at my feet. I took off quicker than any astronaut and so did two of the cameramen. I turned to look at Ionides. There writhing with its head buried deep in the piece of crumpled felt was the viper. The snake man smiled sympathetically. "You are right to be apprehensive. I should have warned you!"

If that was the most frightening experience I have had on "Tonight" let me tell you some more of the mosts.

The Most Disturbing . . .

Jayne Mansfield in a leopard-skin dress which hugged her so tight that she could neither walk nor sit. Geoffrey Johnson-Smith blushing helped her into a lounging position.

The Most Surprising

James Mason, allegedly the *enfant terrible* of the film business—charming, helpful, outspoken and so nice.

The Most Honest

The then Lord Hailsham in an interview in which he coined the phrase "unflappability" saying of himself "I really must learn not to be so pompous in future."

The Most Wittily Expensive

Millionaire Nuban Gulbenkian showing us his specially built private London taxi—gold plated of course—"I'm told it can turn on a sixpence, whatever a sixpence may be."

The Most Beautiful

Dawn Addams in black and diamonds and Sophia Loren in a sheath of shimmering gold.

The Least Likely to be Asked Again

The young Norfolk boy who brought his pet pig, saying that it was well house-trained. To our cost we discovered it wasn't.

The Least Likely to Come Again

June Havoc, who refused to appear because we wanted to mention her early life struggle and show a picture of her stripper sister—Gipsy Rose Lee.

The People I Would Most Like to Come Again

Kenneth More, David Niven, Gene Kelly, Bob Hope, Dame Edith Sitwell, Geraldine McEwan, Noelle Adam, Harry Secombe and dozens more!

In the next seven years I have no doubt that "Tonight" will add to this list. Yes, I really do think that even if I'm not with it, and that is more than likely—"Tonight" in some form or another will be on your screen and someone will be saying "The next 'Tonight' will be tomorrow night. Goodnight."

THEN AS NOW....

Felix, christened by F. C. Ewels, began its first life more as a school magazine than the newspaper it is now. This amateurism was at once put down to the fact that the days of unrationed milk were still to come.

The first Editorial stated the need for a frequently published journal, insisted that Felix would not devour Phoenix (despite their "animal connections") and pointed out that copies for one term cost less than a pint—which they still do!

CORRESPONDENCE

A glance at the first correspondence page should suffice to convince any would-be complainants of the futility of it all—moans about College "hops" from "Wallflower" and "this strange body of men who apparently find it necessary to operate pneumatic drills at the ungodly hour of 7.30 a.m. . . ." and this;

Dear Sir,

In a mild sort of way I would like to register a bitter protest about the Union beer.

Perhaps one of our own tame entomologists could recommend to our so called brewers a more virile type of Gnat.

Yours etc.,
Ulcerated.

Have wallflower and Ulcerated done any good?

FELIX SOBERS UP

Felix ended its first life with the publication of this "comment"—"When are you going to squeeze the bear out of Felix?" It was said that previous issues had merely been "concatenations of accounts of bibulation."

This was too much and after again blaming the scarcity of milk, Felix sobered up. From time to time it has tried to do the same thing for others (not to mention a certain student organisation which is not in the N.U.S.)

In the first fifty issues, Felix has successfully steam-rolled the two cultures into one to produce a scientific report on "Splitting the Infinite," a Chaucerian Lab. Report, Mathematician's Courtship and many other literary gems. Where are all these "Monitor here I come" people now?

FELIX THE INFORMER

Always appalled at ignorance, Felix has acted the informer on many College topics:

BO

(when referred to as "she")—Boanerges, meaning "Sons of Fury" or "Sons of Thunder" was the name given to the sons of Zebedee and later by T. E. Lawrence to one of his motor cycles.

BROWN BAGGER — ORIGIN

(when it was claimed to be in use at U.C. in 1925). "The term appears in a Phoenix of 1918 . . . also in one of H.G. Wells' books."

BY
FRANK HOBSON

THE HYDE PARK

If you should be in the Union next Saturday week do not be surprised to find yourself surrounded by well over 500 lean and hungry athletes. They will have come to take part in the Hyde Park Road Relay—I.C.'s event of the year.

This year there will be nearly 90 teams from Universities, Technical and Training Colleges as far away as Glasgow, Edinburgh and Belfast. It is a major event in the British athletics calendar with coverage in the national and athletics press (and FELIX too!).

Original Idea

That is the size of it now; this year, in fact, it will be just ten times the initial (1949) size. The original idea came to three I.C. runners of that year—Tony Watts (7 times I.C. 440 yds champion and elected this year's Athletic Club's president), Bob Gigg (who ran the fastest lap in that inaugural race), and Alan Brown—in the gym showers after a training run round the park, and indeed their enthusiasm must have seemed justified in that year for I.C. won the race from a field of eight others. Not that such success was to last, for as the race grew in size and reputation the standard of competition rose with it, so that in the following year we could do no better than 5th out of 12—Battersea being the winners.

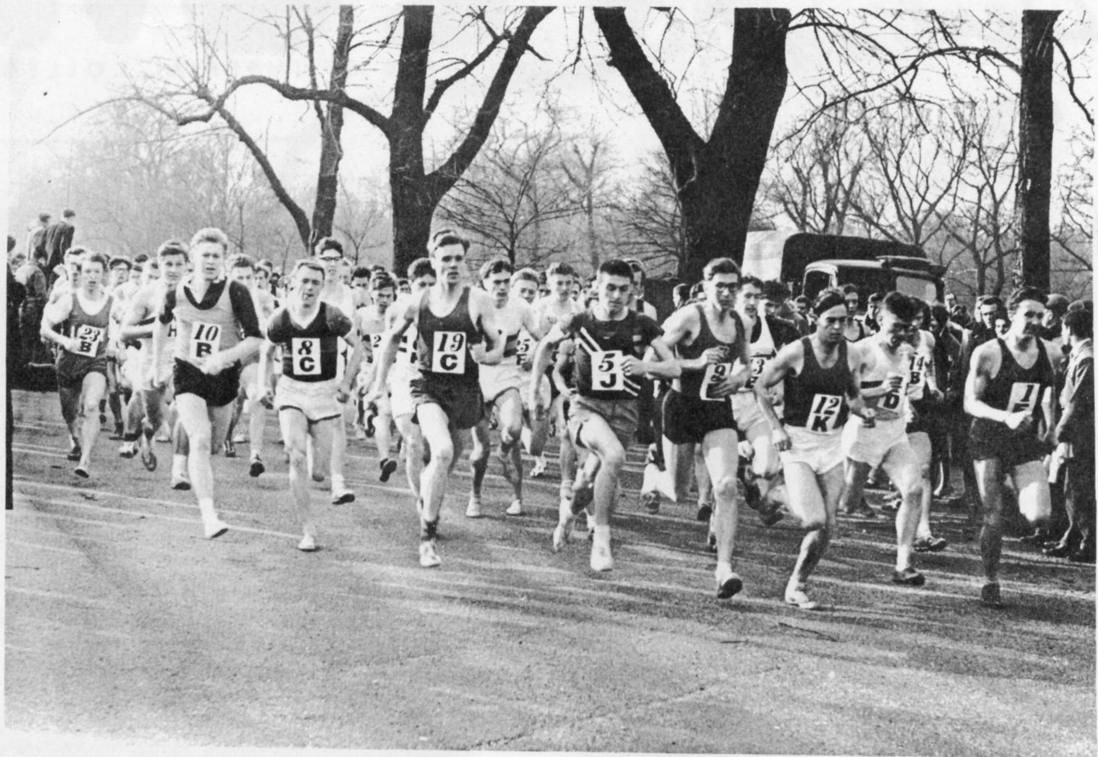
Famous Names

By 1954 the race was attracting a record 27 teams including two or three Oxbridge colleges (thus making the event socially acceptable?). Also running in that year, for the first time, was Martin Hyman (Southampton) (at the very start of a running career which lead to international and olympic appearances and the U.K. 6 mile record).

A feature of those early years, was the appearance of non-scoring, impromptu teams, often containing famous runners who were ineligible to represent any college team. In 1954 one such team with two national champions—John Disley (U.K.) and D. Macmillan (AUS.)—broke the course record.

Bigger Each Year

In 1958 the entry had risen to 42 teams and I.C. did very well to come second to Liverpool, beating into third place a formidable Southampton team containing Martin Hyman and Bruce Tulloh (later to gain fame as a sub-four minute miler and European 5,000 metres champion). Also running for the first time that year was Ron Hill the prodigious little runner from Bolton who is currently going from strength to strength and holds the U.K. 6m. record (taken from Hyman) and must be one of our



best hopes for Tokyo. This years race will not seem the same without Ron, who has now left Manchester University.

The entry shot up during the next two years until by 1960 there were 70 teams entered, including an all-blue team from St. Catherine's Oxford and people such as Tulloh, Turner (winner of the recent inter-counties cross country race), Tim Briault and Trevor Shoeield: the race that year was won by Durham with I.C. 4th.

I.C. Successes

1961 saw one of the most exciting races ever and a very unlucky one for I.C. John Collins had brought us into a 5 sec. lead on the 4th lap and John Cleator running the third fastest time of the day increased this to 30 secs; a lead which good though it was, could not prevent Hill and Turner, running the two fastest laps of the day, from overtaking our last man George Wenk and pushing us into 3rd place.

The following year however our luck turned and, for the first time since 1949 we were victorious. Amongst a record field of 80, I.C.'s team of Roy, Fitzsimmons, Young, Collins, Wilkins, and Cleator had stiff opposition from teams like Leeds Manchester and Nottingham, and individuals like Briault, Johnson and Turner. That year saw the entry of the great Herb Elliot; competing in what must have been his last serious race before studies and controversy about his amateur status caused his premature retirement from athletics. I.C.'s victory was largely due to the

inspired running of John Cleator on the last lap—taking over 37 secs. down on Leeds he produced the third fastest lap of the day to take the lead in the last half-mile.

Well-Known Starters

It is customary to invite some famous athletics personality to start the race. In the past we have had such people as Pat Sage, Jack Crump, Martin Lucking (Empire shot-put champion), Brian Hewson (Great Britain's best half-miler for many years), and last year Robbie Brightwell

(European 440 yds. record holder)—though his false start of last year can only be described as unfortunate.

A race of this magnitude requires an immense amount of organisation and I can think of no better way to end an article on the Hyde Park than by paying tribute to its organisers. The work of these tireless people occupies almost a full 12 months; starting soon after one years race and culminating in a fever of activity and worry at the next

Records—but not enough

Yes! I.C. does actually possess a record library, but what a Library! Only 200 records and a great many of them in an unplayable condition. The reason of course, is that the Musica Society have not had enough money to finance the Library. However, the purpose of this article is neither to moan about the quantity and quality of the records nor to cry out for something to be done, because something is being done. But first, what is a decent library?

Such a library exists to enable people to indulge in musical appreciation at minimal cost to themselves; few people can afford to purchase all the records they just want to play through a few times. Evidently a record library must possess recordings of all the better known works and musicians plus a great number of lesser known works before it can possibly cater for the tastes of the majority of music lovers. Ideally I.C. needs a library of some 600-

700 records which should be run on the same lines as the Haldane library, where incidentally it is now housed. (a student cannot be expected to cope with such a library without experience).

With the increasing number of people in Hall it is becoming more and more desirable that there should be a good record library in the College and to this end some 40 new records have been purchased with more to come. It is hoped that money will be provided to keep the library expanding as well as replacing worn out records; in three or four years time there should then be a record library of 600 records, all in decent order. The only remaining question is, will students use it?—they most certainly should and for those who don't know, you can borrow records at the nominal fee of 1s. per week, with a £1 deposit to join the library which is open all weekdays (including lunch hours) in the Haldane Library.

FELIX

NEWSPAPER OF IMPERIAL COLLEGE UNION



*Darling,
That's 200 Today!*

