



FELIX

Founded 1949

The Newspaper of Imperial College Union

New Hall for Imperial?

Plans are being developed by the College to erect a new Hall of Residence in Princes Gardens. It is expected that the hall will house about 150 students, mainly postgraduate, in high quality accommodation.

The College Secretary, John Smith, has announced that an architect has been engaged to draw up plans for a building on top of the present Sports Centre. The proposed building would be of the same depth and height as Garden Hall and be designed to be in keeping with the existing buildings around Princes Gardens.

It has been suggested that the study-bedrooms should be of a higher quality than Southside rooms; they may contain toilets and showers *en suite*, or be

arranged on a flatlet basis.

This new scheme replaces earlier plans by the Student Residence Committee to buy an existing building. No suitable premises could be found that were cheap enough to become self-financing after a reasonable time. The proposed hall has the advantage that it could be let during the vacation under the Summer Accommodation Scheme, in order to raise revenue to offset the increased cost of building over purchase of existing premises.



The proposed site for the new hall.

Science Parks planned for South Ken and Silwood

Imperial College is planning to develop research centres designed to facilitate the transfer of technology to industry. The centres will be based at Silwood Park and South Kensington, and will be known as 'Science Parks'.

The scheme consists of small units of between 500 and 10,000 square feet. These will be let to industrial concerns who sponsor research at IC, and who wish to have representatives on site.

The major part of the development will be at Silwood Park, the College's field station near Ascot. There is a five acre site at Silwood containing derelict war-time buildings which is being considered for the siting of units totalling 60,000 square feet. The major attraction of the Silwood site is the nuclear reactor situated there. The units will also

be of interest to those industrial concerns involved in environmental research.

The other development will be at South Kensington in the vacant area adjacent to the Old Chemistry building. Part of this will house a small group from Sinclair Research Ltd; the rest of the building will comprise chiefly small research and development units. The plans may result in the loss of about six car parking spaces. The lawn which is the site of the proposed extension to the New Chemistry Building will not be affected.

The College have engaged Investors in Industry (3I) plc to conduct a feasibility study for both sites. If plans do go ahead then it is expected that 3I will provide the necessary capital outlay for the building work. The College will act as landlord, and will collect rent from letting the units.

College Secretary John Smith said that it was unlikely that the scheme would raise a lot of money directly in the short term. Its advantage would be in making the College more attractive to firms sponsoring research.

Science Parks already exist at a number of British Universities including Leeds, Hull, Bradford and, notably, Cambridge.

New chair in Nuclear Engineering

•A new chair in Nuclear Engineering has been created in the Chem Eng Department. The first holder of the chair will be Professor Norman Franklin FRS OBE CBE who was head of the National Nuclear Corporation until April.

Franklin, 60, was a lecturer at the University of Leeds until 1955 when he joined the UKAEA, rising to the post of Managing Director and Chief Executive in 1971.

The new chair is being jointly funded by British Nuclear Fuels, UKAEA, and the CEGB.

•Dr L S Kershenbaum has been appointed Senior Tutor for the College, in succession to Dr R Smith. He takes up his new post for four years from October 1.



Mooney for the chop?

Dear Sir

The other day I was in dire need of some victuals and being in the vicinity of Southside Refectory I steeled myself to the task of eating amongst hordes of nubile American female students.

Upon entering the refectory I saw writ large on the board "Lamb...with courgettes", so I decided to avail myself of this wonderous dish.

Imagine my surprise when the lamb upon entering my mouth tasted suspiciously of beef!

Feeling a little cheated I attempted to contact the manager but was told he was not around, nor has he been since.

I recall an incident in 1982 in which lamb pasties turned out to be beef. Mr Mooney promised it would never happen again. It strikes me that refectories could not care what they serve to their customers just so long as they get the cash with which they may change the decor every six months.

Yours on an empty stomach
Dave Parry

Trouble at mill

Dear Editor

During Monday and Tuesday (August 13 and 14) student cleaners and their representatives met with College hierarchy of the SAC scheme, namely Gill Davies and another member of personnel.

The main proposals put forward by the cleaners on Monday were: free accommodation for the student cleaners, as in the Summer Letting Scheme run by Michael Arthur; higher hourly rates for next year (rates which have remained static at £1.70 per hour for the past three years); and some type of remuneration for the breakfast vouchers unused and left as tips for the cleaners by the guests. It should be noted here that all breakfasts are paid for by the SAC at £2.30 each regardless of whether or not they are used.

During the first meeting the "college" spent most of their time listening to the student cleaners' requests and trying to

convey how they had no control over the breakfasts they had paid for.

The second meeting, on Tuesday, was even more fruitless in that the first sentence uttered by Gill Davies was essentially "After careful consideration we are unable to offer any concessions." This came as no surprise to the representatives of the student cleaners who have become accustomed to the College doing nothing for anyone but themselves.

Much time was spent by the College in trying to express how their hands were tied by predetermined budgets, and that the College and ultimately the students would benefit from the profit of over £¼ million made by the SAC Scheme, but that it was impossible to aid the student cleaners by providing free accommodation; that £8 per week already deducted would make a great difference to the £36.04 take-home pay which the cleaners receive to survive on. The difference between watching every penny and living.

College tried to insist that the SAC cleaning employment open to students is primarily a part time job—not intended to be 'self-sufficient', a point not even touched upon in the advertisements and interview for the job.

The general feeling of the cleaners in the SAC Scheme is that the College administration is once again proceeding in its typical manner of total disregard for students, students without whom the College would not exist.

Yours
Student Cleaners of the SAC Scheme

A sort of patriotism

Dear Sir

Once again the season for international competitions is upon us and I expect most of your readers (being true patriots) have been glued to their television sets eagerly lapping up the triumphs (and disasters) of their respective national teams.

However, I feel that the time has come to point out that, whilst a little friendly rivalry is no bad thing, such blatant setting of nation against nation can only serve to bolster the average citizen's latent jingoistic instincts leading inevitably to an increased level of nationalism and possible insularity in the competing nations.

Obviously were such attitudes to become prevalent in the world, they could only serve to heighten the political tensions between countries and ideologies and so lead us ever nearer to the nuclear precipice.

Thus I ask all true patriots, if they truly love their countries and wish to keep them from the Holocaust to join the Soviet Union and her satellites in boycotting the Olympics in order that world peace may be maintained.

Yours ever so sincerely
Hugh Stiles
Chem Eng PG

FELIX

Breakfast

The reason behind the summer letting of Southside and Linstead rooms to tourists is to raise money to subsidise student rents during term time. It is an economically sensible policy.

The fact remains, though, that over the last three years the rent charged to tourists has risen and the student term time rents have risen, but the wages paid to SAC cleaners have dropped in real terms.

The College reasoning behind this is complex. They have to maintain a relatively large cleaner workforce all through the summer, even during slack periods, so that they can cope with the occasional arrival and departure of large parties of tourists. At the same time they have to maintain 'differentials' between wages paid to permanent cleaners and those paid to student cleaners. The College authorities are also, doubtless, aware that there is never any shortage of applicants for posts as summer cleaners.

But for the College to claim that they keep the wages low so as to keep student rents low is patently absurd when one bears in mind the way that the SAC wastes money on breakfasts.

The SAC finances are arranged thus: for each room let to a tourist, SAC pays a certain amount to the residence account. This benefits students during term time. But for each tourist the SAC also gives the Refectory £2.30 for breakfasts. Most of these breakfasts remain uneaten and so Mooney makes a massive profit for the refectories by "under catering".

If the College authorities were really determined to keep student rents down they would discontinue this absurd policy at once.

Dinner

It is the conviction of Hindus that the cow is a sacred animal. Once again, Mr Mooney's staff are wrongly describing beef as lamb (see letters), and so Hindus eating in Southside are likely to have committed what they would regard as a grave sin.

It is intolerable that refectory staff should make such crass errors. The sincerely held religious beliefs of others are worthy of more respect.

Maz

Today Maz Fellows, the FELIX phototypesetter operator, leaves Union employment.

During her five years at College, Maz has given unstinting service to the Union, above and beyond the call of duty.

I join with my five immediate predecessors in thanking her from the bottom of our hearts, and wishing her all the best for the future.

Thanks also to Hugh Stiles, J Martin Taylor, Diane Love, Peter Rodgers, Pallab Ghosh, Mark Smith, Pete Dawson, R S Scorer, Peter Burridge, Len Moulder, Chris Hendy and Pete Coleman.

Felix is published by the Editor for, and on behalf of, Imperial College Union Publications Board, and is printed by the Union Print Unit, Imperial College, Prince Consort Road, London SW7. Telephone 01-589 5111 Ext 1048. Editor: David Rowe. Business Manager: J Martin Taylor. Advertising Manager: Paul Belford. Copyright FELIX 1984. ISSN — 10140 — 0711.



Jack Nutbeem retires

Super-messenger Jack Nutbeem retired last week after 20 years at Imperial College.

Jack pictured above with Vi Lindfield, the telephonist who has also retired, was a familiar sight all over the College, and was well-liked by staff and students alike.

Goodbye Maz!

Maz Fellows, the FELIX phototypesetter operator, is leaving Union employment after five years. Maz has been responsible for typesetting everything that goes in FELIX, as well as many other Union publications.

During her time here Maz has worked for such notorious editors as Steve Marshall and Pallab Ghosh, but despite this has maintained a cheerful disposition throughout.

Maz has been a friend to everyone who has used the FELIX Office in the last five years. She has always answered the silliest enquiries with her characteristic patience, and has kept cool in the direst of emergencies.

We at FELIX wish Maz all the best in her new job in Tooting. She will be sorely missed.

Maz's leaving means that there will be three new Union staff

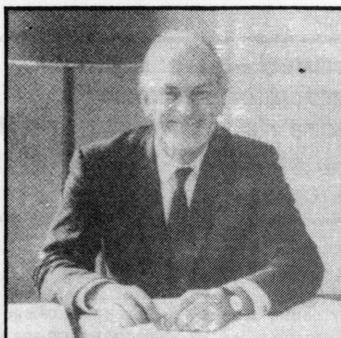
starting this session. A new receptionist will be starting in October, and the new post of Catering Supervisor has already been filled. Mr Norman Jardine will take over responsibility for running the new Union snack-bar outlet next month.



Maz Fellows who leaves today.

Obituary

**Mr M J DAVIES
COLLEGE SECRETARY
1962-79**



**Mr M J (Mickey) Davies CMG
OBE MA died on 8th July.**

Born in 1918 in South Africa of Welsh extraction he was educated at the Diocesan College, Cape Town, at the University of Cape Town and, as a Rhodes Scholar, Trinity College, Oxford. He played rugby football for the University of Oxford, and for Wales in 1938 and 1939, always treasuring the memory of his selection.

Appointed to the Colonial Administrative Service in Tanganyika in 1940, as an

Administrative Officer, he quickly gained promotion, becoming Private Secretary to a series of Governors from 1943 to 1947. From 1947 to 1949 he was seconded to the Colonial Office as one of the most able administrative officers of his year and in 1958 and 1959 was Assistant Special Representative for Tanganyika at the Trusteeship Council of the United Nations. In 1959 he was made Minister for Constitutional Affairs in Tanganyika, later taking over the portfolio for Security and Immigration at a time of great political ferment and popular agitation, while being at the same time responsible for the planning of a major re-organisation and expansion of the Police Force which was then about to be introduced. He was Minister for Information Services until the date of self-government on 1 May 1961, having for some months in 1960 been Acting Chief Secretary. His record was distinguished and there was no assignment in which he was not outstandingly successful. He was

made an OBE in 1957 for his work in the Arusha district. In 1961 he was awarded the *Medaille de la Belgique Reconnaissante* for services to Belgian refugees and in the same year he was made CMG for his services as a Minister.

His second career in administration followed his retirement from Her Majesty's Overseas Civil Service when in 1962 he was appointed, from a large field of candidates, to the post of Secretary of the College and Clerk to the Governors of the Imperial College of Science and Technology. It was a time of major expansion and reconstruction at the College taking place under the leadership of the Rector, Sir Patrick Linstead. Only the Blackett Laboratory had been completed and all but one of the other buildings on the site were under construction or adaptation under the "Jubilee Scheme". Mickey Davies adapted quickly to the new challenge, moulding a committee structure and administrative machinery to ensure effective consultation, communication and control in appropriate areas. He steered the Administration through the further expansion of the "post-Robbins" period in the mid-sixties, through a time of

student pressure for greater participation in decision-making processes which marked the late 60s and early 70s during the Rectorship of Lord Penney, and subsequently, until his decision to retire in June 1979, serving the present Rector, Lord Flowers. A man of drive and dynamism, analytical ability, conscientiousness and good humour, he played a pivotal role in the development of the College, while still devoting a full part of himself to his family, his friends and his hobbies. He was awarded Honorary Fellowship in 1979.

Shortly before his departure from the College he delivered a valedictory lecture which he closed by quoting from W H Auden: "*When I find myself in the company of scientists I feel like a shabby curate who has strayed by mistake into a drawing room full of dukes.*" He need never have felt ashamed; many scientists and engineers who have been or are associated with Imperial College will regret the passing of Mickey Davies and acknowledge their immense debt to him as will the many others of his former friends, colleagues, and acquaintances.

He leaves a widow, Elizabeth, and three children, Jennifer, Philip, and Peter.

Imperial College is to have a new electronic telephone system to replace both the present internal and external systems. The new exchange is presently being installed and should become operational on Saturday 1 September. The new system will offer a wide range of facilities, many of which will be available to users by means of special codes.

At present the College has two entirely separate telephone systems for internal and external calls. The former uses an automatic exchange with extension-to-extension dialling for 2600 extensions, whilst the latter requires that one of the 1400 extensions is manually connected to an external line by the operator each time a call is made.

This situation requires that each user has two telephones, each with a different number. This means twice as many instruments and connecting lines to be maintained. The totally manual nature of the external exchange means that a large number of operators (up to ten) are required for busy periods, whilst it is not possible to make external calls at all when the switchboard is unmanned.

In addition both systems are old and increasingly prone to breakdowns. The internal system was installed 25 years ago and is obsolete so spare parts are very difficult to obtain. The external exchange was bought second-hand 15 years ago—it is believed the Science Museum are interested in having it (as an exhibit!) when the College has finished with it.

The new exchange will utilize the existing wiring of the present internal exchange, reconnected to the new equipment. The system, a Northern Telecoms SL1 exchange, is all-electronic. This means that the network is controlled by a computer, rather than circuit wiring as in a conventional exchange. The system's software controls the switching of calls and the various facilities which are available. The range of facilities can be modified simply by changing the software.

The Changeover

All the 2600 extensions on the existing internal system will be on the new system, unless the department concerned has not asked for an extension to be retained. On the changeover day, 1 September, all telephones will have new numbers, which will be arranged in departmental groups. This means that of the four figure number, the first two indicate the department whilst the last two will usually be consecutive with others in the same sub-group or section of the department. A new telephone directory will, of course, be issued before the change of numbers takes place, as will new card-board number discs for dial centres.

After its introduction the new system will operate in parallel with the present external exchange for about two weeks. During this time it will only be able to make internal calls. On the 15 September the old external switchboard will shut-down as the new system will become able to make external calls. This will complete the changeover to a single-instrument system with extension-to-extension dialling and automatic access to external lines. Operators will only be required to answer and direct incoming calls since external lines will be available to authorized extensions by dialling a two-figure code.

Initially the present internal instruments will still be in place, but of the 1400 extensions which will be able to make external calls 1000 will soon be equipped with modern push-button Statesman instruments. As a preparation for this some offices have already had British Telecom plugs fitted so the new instruments will simply be delivered and plugged in after the changeover. These will replace some of the very old instruments on the present internal system, and in due course the remaining museum-pieces will be replaced with newer dial phones.

Restrictions on External Calls

There will be no restrictions on internal calls—any extension can dial any other at any time. External calls will, however, be strictly controlled. There will be five categories of instrument (see table 1) each with different access to external lines. In addition an extension may have time restrictions on the making of external calls on College business. The different categories of extension do not indicate a physical difference—the software controlling the system contains instructions about the type of call each extension can make, and the times it can make them. The category of each extension is decided by the department concerned, and can be changed if required simply by re-programming the system.

One other restriction will be on certain barred numbers which it will not be possible to dial on the public exchange. These numbers are programmed into the system and cover such things as recorded information services. Nor will it be possible to dial 100 for the operator on the public exchange, since this would allow calls not permitted by the College's restrictions to be placed through the operator. Directory enquiries will still be available, however.

Personal calls can be made by the user of any extension able to make external calls. A different two-figure code will be dialled, and each month a bill for every such extension will be produced by the system and sent to the extension user. The restrictions on calls will not apply to personal calls, since the College will not be paying for them.

Incoming Calls

These will be routed through the operator as at present. Since the new switchboard will have only incoming calls to handle it will have only half as many operator positions as the old one.

Incoming external calls will be indicated by a different ringing tone to internal calls, so it will be possible to tell if your caller is in College or not. If the extension requested by the incoming caller is busy with an internal call a tone will sound to inform the user that an incoming call is waiting. He can then speak to this call whilst holding the existing call, and then switch between the two, by the recall button. (Not all phones will be fitted with a recall button initially.)

Nearly all phones will be able to receive incoming external calls, even if they cannot make outgoing ones. The only exceptions will be phones in 'public' places such as corridors, lecture theatres, etc.

Safeguards against abuse

The new exchange, being a computer, offers extensive safeguards to prevent abuse of the system. Each month the head of each department or administrative section will be sent a statement with the total amount spent on external calls by each extension in that department. Academic departments will be responsible for their own phone bills to encourage them to keep a close watch for any abuse.

If the head of department suspects abuse of any extension he can ask the exchange supervisor for full information on all calls dialled from it, including all numbers dialled, duration and cost. This information is all stored by the exchange every time a call is made but is not normally used, partly because of the enormous volume of such data. It is only available to heads of department on request.

TELEPHONES

-the new system-



Pictured above: the new Statesman instrument. Above right: one of the oldest phones still in use in the College.

Class	Restrictions
A	Unrestricted—can make local, trunk and international calls.
B	Semi-restricted—can make local and trunk calls only.
C	Semi-restricted—can make local calls only.
D	Restricted—cannot make any outgoing calls, but can receive incoming calls.
E	Fully restricted—cannot make outgoing or receive incoming calls—for internal use only.

All extensions except class E can receive any type of incoming calls, during the hours when the switchboard is manned.
In addition to the above restrictions there may be time restrictions, eg calls may be barred between 9:00am and 1:00pm, at the discretion of the department.

Table 1

Special Numbers	
Emergency (Fire, Police, Ambulance)	999
Health Service	3333
General College Information	4444
Telephone Faults	5555
Maintenance (Normal Hours)	6666
Maintenance (Outside normal hours)	7777
Telephone Information	3430
Nightline	6789

Special Deal

Until recently it was thought the College would have to manage with its present telephone systems for several more years due to financial stringency. This was despite the urgency of the situation, with increased unreliability as the struggle to keep the old equipment working intensified. A special deal was negotiated with British Telecom, however, to supply one of the latest state-of-the-art exchanges on very favourable terms, at a cost of less than £1m.

This has been possible because of the prestige that BT attach to supplying the College's new system. It is expected that they will use the College as a showpiece to promote the system throughout the world. This should have the additional benefit from the College's point of view in that BT should be especially anxious to get it working properly. As Peter Burrige, the College's Telephone Engineer, admits the system will be well tested at IC—no doubt numerous bright-sparks will soon be attempting all sorts of new tricks with what is after all a computer with 2600 terminals. If it can survive and work well here it must surely be a world-beater!

Facilities available

The facilities available are of two types: those requiring pre-arrangement with the telephone exchange; and those accessed by dialling special codes. The codes for the latter type are listed in Table 2. Each facility available is described below. Note that the availability of some facilities will be restricted.

Features Requiring Pre-Arrangement

- 1. Group Call Pick-Up**—This allows any user within a pre-arranged group of extensions to answer a call to any other extension within the group, by dialling a code. This will be useful if several extensions are together in one large office.
- 2. Call Pick-Up**—Certain authorized extensions will be able to answer a call directed to any other extension which is ringing, by dialling a code followed by the extension number.
- 3. Hunting**—If an extension within a pre-arranged group is engaged, any call to that extension is automatically routed to the next free extension in the group. Can be used to route calls to a deputy or a secretary when the head of a section is busy.
- 4. Call Forward—No Answer**—Similar to hunting, but operates if an extension is not answered within a fixed time, when the call is transferred to a second pre-arranged extension.
- 5. Do Not Disturb**—The switchboard operator can make an extension appear busy to incoming calls, whilst calls can still be made from the extension. Will not be widely available!
- 6. Intrusion**—Use of this code by specially authorized extensions will enable them to intrude on an established call. The system sounds a 'warn tone' to the parties in the established call. Use of this facility will be very restricted!

Features Accessed by Use of Codes

- 1. Access to Other Systems**—Direct dialling to the Silwood Park and Southside/Linstead systems will still be available, but different codes will be used. Access will also be available to the College Travel Agents, but the direct line to Senate House will no longer be available.
- 2. Ring Back**—If a number rung is busy the caller can, by dialling a code, request the system to complete the connection as soon as it becomes free, when both phones will ring simultaneously. This can also be used if there is no reply to a call—the system completes the connection as soon as the called extension is used and subsequently becomes free (which indicates the user has returned to his

office). Such requests can be cancelled by use of a second code, and automatically lapse after eight hours.

- 3. Short Codes**—These are lists of frequently dialled external numbers which are represented by three figure codes published in the College telephone directory. To use one dial the facility code, followed by the short code. Users with secretarial feature phones can have their own list of short codes.
- 4. Call Forward**—If a user will be away from their office they can forward all calls to any other extension by dialling a code and the extension number. The request can be cancelled by a code dialled at the user's extension, or by a different code at the remote extension.
- 5. Transfer, Enquiry, or Conference**—Whilst speaking to a caller, on an internal or external call, a user can by operating the recall button hold the call and dial a third extension to transfer the call, to make an enquiry or to set up a conference. It is possible to set up a conference between up to six people, one of whom can be an external caller.
- 6. Broker's Call**—Similar to Transfer, etc., but after operating the recall button a code is dialled which prevents the call on hold hearing the conversation between the broker and the third extension. The held call can be internal or external.
- 7. Save**—Use of the Save code stores the last number dialled if an extension or external number is busy, or not answered (external calls only). The number is re-dialled by dialling the code again.
- 8. Alarm Call**—By entering a code followed by a time in 24 hour clock a user will receive an alarm call at the time specified.

Notes:

- During the early part of next term demonstrations of the new system will be held. For students, these will be at 12:00noon and 2:00pm on Monday 15 to Wednesday 17 October in the Great Hall. A video describing the new system will be shown in the Sherfield foyer after the changeover.
- If problems are experienced then the operator can be contacted by dialling 0, or recalled during a call by using the recall button and 0. There will be a special number for enquiries about use of the telephone system, 3430.
Recall buttons will already be fitted to all new instruments issued and they will be fitted to existing instruments in due course. Until one is fitted facilities requiring its use will not be available to that extension.

Facility	Code
Operator	0
Recall Operator	R0
Exchange line (personal calls)	91 (or # where fitted)
Exchange line (College calls)	92 (or * where fitted)
Access to College Travel Agent's switchboard	93
Access to Southside/Linstead system	94 followed by staircase no.
Access to Silwood Park system	96 followed by Silwood ext no
Transfer call, Enquiry call or Conference	R, followed by ext. no.
Ring Back	R11
Cancel Ring Back	21
Individual Short Code (feature phones only)	12, followed by code
Common Short Code	23, followed by code
Call Pick-Up	13, followed by ext. no.
Group Call Pick-Up (in pre-arranged groups only)	27
Call Forward	14, followed by ext. no.
Cancel Call Forward	R24
Cancel Call Forward from remote extension	R25, followed by ext. no.
Broker's Call	R17, followed by ext. no.
Save Number	R18
Alarm Call	26, followed by time in 24hr clock

R - Recall Button
Note: Where R appears, the facility shown will be available only to those phones with a Recall button fitted.

Table 2

Resources – where the market fails

The miners are on strike, and it is said that pits are uneconomic. There is a glut of oil, and the world population increases by a million every four days. These are some of the problems that R S Scorer considers here, together with a stern warning for the future.

From growth into recession.

In the last ten years we have seen a complete turnabout in the economic scene. The average world citizen has become perceptibly poorer whereas for a thousand years before, it had been (incorrectly) thought that everyone would become more affluent.

Many environmentalists foresaw this change, the final indicator being that only since 1973 have we failed to find new reserves of oil faster than we are using it up. We don't blame governments for the recession, nor for failing to prevent it; but we do blame them for not expecting it, for not preparing for more of it, for not recognising it, and for having the wrong remedies now that it has begun.

Long before 1973 many environmentalists and some economists said that economic growth could not go on for ever, and that message was inherent in the writings of Malthus even before economic growth got going in earnest. Some economists have asserted, and still continue to assert, that growth can go on indefinitely, and they have tried to redefine their terms to that end. But we can't eat computers or produce materials out of serving each other; and, as if in answer to all problems, some economists have declared it to be a reliable law of nature that a material scarcity causes a substitute to be discovered.

The cost of population increase.

An increase in the number of people means an increase in material consumption; on top of that more affluence means more material consumption per person. The world population increase was roughly 60 million a year in the 1960s, 70 million in the '70s, 80 million in the '80s, and promises to be 90 million a year in the 1990s. Merely to maintain the present average level of affluence, extra resource consumption would have to be enough to provide for a new city of a million people every four days.

Imagine the rescue effort that would be required if the fabric of 90 cities each housing a million people, their schools, public services, roads, etc had to be provided anew each year. That is a measure of the material requirement for the affluence level of the world to be kept where it is today: imagine how it would detract from all the other things we wish to do. Then realise that it is happening today and we are failing to provide for the next generation.

How growth happened.

The era 1945-1973 was one of unprecedented growth. We used up the world's stock of raw materials much more rapidly than during the destructive periods of each of the two wars. Middle East oil became available in plenty, and its exploitation was based in the already industrialised countries. Their idea of the price of oil was the cost of getting it and refining it plus a 'generous' royalty of, say, 50% to the 'owners'. That resulted in oil costing about a dollar a barrel in the 1960s.

We saw the 'economic miracle', exemplified particularly by the recovery of Germany. But in reality it was no miracle at all, for who but a fool could fail to make a fortune on oil at a dollar a barrel when having the technology to convert it into products worth a hundred dollars? If the price were now a hundred dollars, there would be plenty of people able to make a profit out of it, and by the standards of history we would be very well off, for the products of oil would still be cheap in terms of a day's wage.

Coal in trouble through overproduction.

It is difficult to sell all the coal produced in Britain because oil is too cheap, and that is because people continue to act as if oil will flow for ever.

Oil is cheap, in the sense that it is easy to get, almost like picking up money lying in the street. But it ought to be priced at its value, not at the cost of getting it. Then coal could also be sold at its value, and no coal pit in Britain would be called uneconomic.

It is ironic that we have a butter mountain, and vast milk, grain, and wine surpluses in the EEC because the Community practices gross interference in the market, although the EEC was created in order to let the market operate freely. The marketplace remedies of lowering the price (within the Community) or closing the least economic farms are not used: some of the surpluses are sold to Russia at a knock-down price.

The correct remedy when it comes to a valuable mineral resource, which can only be mined once, would be to work out all mines at whatever cost because, once closed, a pit becomes unsafe to re-open, and so any residual coal would be lost for ever. But the dictates of the marketplace are now followed and some pits are declared 'uneconomic'. We should remind ourselves that had not OPEC forced up the price of oil in the 1970s,

our North Sea oil would not now be economic. Until we learn to price fuels according to their value instead of the cost of getting them, the marketplace is the wrong judge of fuel policies. Actually the nonsensical argument has gone one stage further: discussions have been started about opening an open-cast mine, under private management, in the Forest of Dean, although it has been declared a conservation area and is one of our few remaining forests. The object would be to obtain cheaper coal which could compete in the market with oil as an energy source. This would make the coal mountain an even more ridiculous aspect of our civilisation.

The people mountain.

There comes a moment in the history of the fossil fuel civilisation when it must concern itself about posterity. For the last 200 years industry and technology have visibly and significantly improved the welfare of people, and it has depended absolutely on the use of fossil fuel. We have behaved as if the source of fuel were infinite; but it is very finite, even in terms of human history which in turn is only a tiny bit of biological evolution. We are now at the turning point, and the past is no longer the best guide to the future.

The excess of people has come about because all the constraints on increase have been removed as if they were bad because they reduced the amount of human life. The first battle, for life, has been won; but the second, to control the amount of it so that it may be fully enjoyed, is being lost.

The growth of population has reached a point at which we cannot care properly for the children. Several countries have populations half of which are under the age of sixteen. There is no hope for them of participating in the material and intellectual life which we enjoy. Although the battle to control the population explosion seems desperate - without hope, it must be pursued because we must preserve pockets of human culture which can outlast the terrible vengeance of nature against our species. If we save all the children we heighten the predicament. We do not know what future events will do to them, but the cool extrapolation of numbers to 8 billion in 2025 and 10 billion in 2050 is a condemnation to indescribable squalor and deprivation.

Before then social upheavals of a kind as yet unknown will result from the contrasts of poverty and wealth. The misery has already begun; make no mistake!

Whatever else we do, we should not determine our policy for the most basic resource of our civilization - fuel - on the basis of 'profit now', but that is what the governments of several wealthy countries are engaged in.

R S Scorer is Emeritus Professor of Theoretical Mechanics in the Department of Mathematics, Imperial College.

Some Aspects of Postgraduate Life at IC

Hendy, C.H. Postgraduate Group Chairman 1984/5

Abstract

Alcohol and sex in relation to the activities of a postgraduate are discussed in intimate detail. Supervisors and Tutors from all departments are named and all their faults exposed. The words work and thesis are carefully avoided.

Key-words

Bitter-Lager-Bushmills-Guinness-Daley Thompson

Introduction

The Postgraduate Group (PGG) is the biggest individual group at Imperial College. It also has the distinction of being independent in its affairs and actions (similar to the CCUs). To run properly, it is necessary for all PGs to become involved in its activities and those of the students union. In this report a review of last years activities is given and events and opportunities for the future discussed.

Method

The original methods, as employed in October 1983, were to get as much involvement in the PGG as possible. After the initial success of the Ploughman's lunch, apathy set in until February, when a flurry of activity resulted in the organisation of a joint Silwood/South Kensington party.

In April it was discovered that the PGG had no constitution. This was quickly remedied and a new constitution was passed at Joint Council in June.

As for the future of the PGG, an excellent committee has been formed for next year (see appendix), and it is hoped that the experienced gained this year will be used to good effect.

The most important piece of equipment used in this year's work however was alcohol. This simple yet highly effective liquid was used time after time to induce favourable results and will be used extensively in all forthcoming work.

Results

Both social events held were successful especially the Silwood party, where I am sure all 70 plus people who went from South Ken enjoyed themselves. (Apologies to those two or three people we left behind, hope the walk home wasn't too bad!!!)

Discussion

Overall the year has been reasonably successful. I hope that those who attended the social events have enjoyed themselves and not suffered too much the next day!! I feel next year could be the most important for PGs at IC with the College Governing Body recommending a change in student percentages from 25% PGs to 40% PGs it is important that all Postgrads start to make their presence felt. The Student Union is run by undergraduates for undergraduates.

Events lined up for next year include a freshers PG party in the Holland Club on 2 October, preceded by a general meeting of the group. Numbers will be limited so watch the freshers Felix for details about tickets. There is also a cricket/sports day against Silwood on 9 September. Anybody interested in participating or spectating, please see a member of the committee.

I must apologise to all those PGs who have applied for membership of the Holland Club but have yet to receive your membership cards. I am afraid I can only blame this on the incompetence of the membership secretary and you may assume your membership has been accepted.

Finally, if you are in the process of writing your thesis or your first year transfer report may I wish you luck. I hope you have as successful a 1984/5 as I am sure the PGG will.

Conclusion

Too much beer makes you fall over.

Acknowledgements

I should like to thank Jim Brannigan for being my main support on last year's Committee, John Passmore and Doug Armstrong (past Chairman) for their help and support, last year's sabbaticals for their interest, Jenny Rudd and Andy Hamilton from Silwood Park and, finally, all the barmen in college for their ever attentive service.

You may have noticed that the abstract has nothing whatsoever to do with the content of this report. It was the only way I could think of inducing readership.

Appendix

Chairman	Chris Hendy <i>Zoology</i>
Secretary	John Passmore <i>Mines</i>
Treasurer	Jim Brannigan <i>Biochemistry</i>
Undergraduate Liason	Sean Davi s <i>Physics</i>
Ordinary Members	Paul Monsan <i>Mines</i> Diane Love <i>Physics</i>

ULU Travel
is now on campus

JUNIOR COMMON ROOM

STA TRAVEL

OPEN UNTIL AUG 31

IMPERIAL COLLEGE UNION
THE JUNIOR COMMON ROOM
SHERFIELD BUILDING
PRINCE CONSORT ROAD
SW7 2AZ Tel: 589 8882

STA Travel

- LOW COST FLIGHTS WORLDWIDE
- DISCOUNTED TRAIN-FARES TO EUROPE
- ADVENTURE TOURS
- TRAVEL INSURANCE
- ISIC CARDS ON CAMPUS

CINEMA

Allen a schmuck

In *Broadway Danny Rose* (PG) Woody Allen plays a theatrical agent who gives a lot of advice. One piece he leaves out is that familiarity breeds contempt and Allen is slowly but surely approaching the point where the two merge. *Danny Rose* is not a bad film, just it has been released rather abruptly after the over-rated *Zelig* and is similarly short. Again Allen casts Mia Farrow opposite him but whereas she has transformed brilliantly from the erudite physician of *Zelig* to play Tina, a restless peroxide moll, Allen is basically playing the same character (schmuck) again.

His megalomaniac approach to film-making—he writes, directs and has most of the lines—is such that he neglects such essentials as developing the supporting cast and plot. The screen-play has been noticeably stretched, even at a meagre 85 minutes.

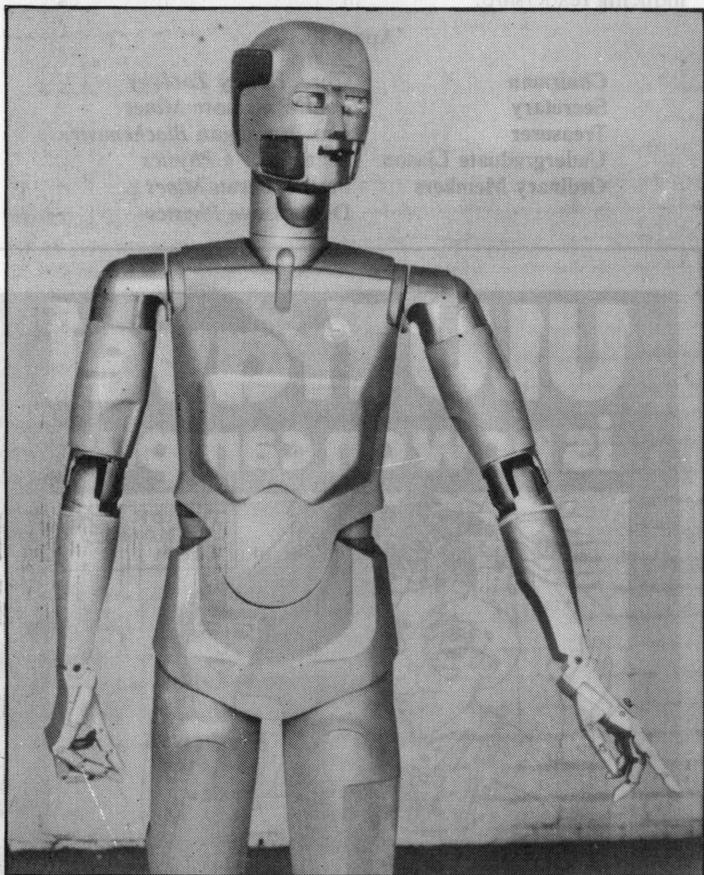
Allen meets Farrow through his protégé, lugubrious cabaret star Lou Canova (also Farrow's lover—a fine cameo by Nick Apollo Forte) and a misunderstanding involving these three, Canova's wife and another of Tina's men, a poet mafiosa leads to much merriment and mayhem.

The two stars are being pursued by two hit-men wielding baseball bats (mindless rather than menacing) whilst Lou drinks himself silly prior to a showcase gig at the Waldorf before representatives of national television and a Las Vegas night spot.

Despite all this, beautiful black and white photography, a novel structure (a group of comics telling *Danny Rose* stories), Rose's exotic roster of acts and the magnificent Mia Farrow, the film still failed to move this writer—strange, the couple beside me laughed like drains.



Mia Farrow as Tina Vitale the widow of a bumped off gangster in the new comedy, *'Broadway Danny Rose'*.



Man has long been fascinated with the creation of automata that mimic the form and actions of our species. A new exhibition at the Victoria and Albert Museum's Boilerhouse Project attempts to cast a historical and cultural perspective against the forthcoming era of automation—dispelling commonly held myths by showing a range of material from science fiction film clips to a modern industrial robot. The star of the show is probably a mechanical android made by McAndroids of Brixton, a partly mobile tailors dummy that shows how far we have to go to achieve anything near human form or movement for our machines. The exhibition is small and a little short on content, but could make an interesting distraction if you care to wander in from Exhibition Road one afternoon. **Robots runs until 25 October.**

M A Smith

RECORDS

Summer Singles

April Showers—Abandon Ship

With a light "Everything But The Girl" feel, Beatrice Colin, and Jonathan Bernstein release their first single on Chrysalis, and quite an achievement it is too. 'Abandon Ship' has an unobtrusive but memorable melody, and words that actually mean something! It even has a great B-side 'Every Time We Say Goodbye'. What more could it need to be successful—a ban from Mike Read perhaps?

Tracey Ullman—Sunglasses

I guess it must be difficult to find songs for a voice that can only manage 3 notes, and it looks like they've run out right now. Although a certain chart success, with probably a very good (and very expensive) video, this is really dreadful. Bring back the Wombles!

Adventures—Another Silent Day

This is more like it. An intriguing double vocal from Terry Sharpe & Eileen Gribben, backed by a gospel choir, gives it a feel quite unlike anything I've ever heard. And yet, when I play it, my feet start tapping, and I end up whistling the tune all day. The best debut single I've heard in a long time. Buy it!

The Colour Field—Take

As a longtime fan of the Specials and Funboy 3, I always look forward to Terry Hall's singles, but this second single from his new band, is almost as disappointing as the first ('The Colourfield'). Despite a clever 'hook' melody, and very deep, pseudo Paul Weller lyrics, the single cannot be considered in the same league as songs like 'Ghost Town' or 'Lunatics'. The B-side is the classic 'Windmills of Your Mind', reworked as a chart of desperation, which works out really well—but who buys a single for a B-side?

Spandau Ballet — I'll Fly For You

From the latest hit album 'Parade', this has been considerably remixed, and the 12" at least, has 2 very different versions. The vocal 'AA' side has the distinctive Spandau Feel, but the 'A' side Glide Version is a real mood piece, with loads of strings, and whispered vocals. Whatever your opinion of the Spandaus, 'Parade' is a classic album, and this, one of the best tracks from it. But then, it's not 'hip to enjoy trendy bands like this, so you'll probably put it down anyway.