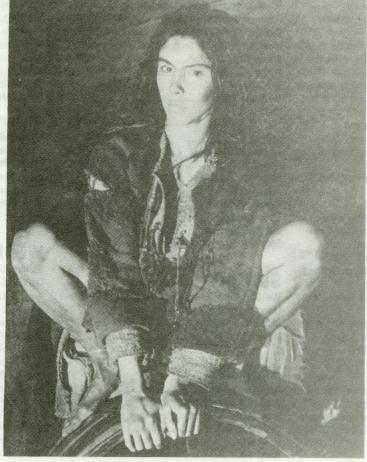
Tommorrow's Student—

Full of apathy



Empty of hope

An Extraordinary General Meeting of Imperial College Union was held last Tuesday to consider action against the Government's proposed introduction of student loans.

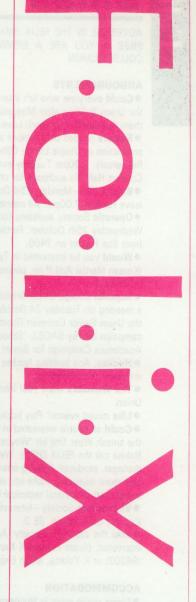
Neil McCluskey, ICU President, explained that the Union's tactics were now in the form of delaying the Government in the hope that the timetable for the introduction of student loans would be disrupted. He went on to say that as the next year was an election year, the Government is unlikely to push through a Bill if it is likely to be unpopular. He said the Union may consider the unusual action of lobbying the House of Lords as a last resort.

Mr McCluskey asked all students to write to their MP, and especially the Conservative Party MPs, to argue with them against the loans proposal. It was pointed out that if an MP receives five or more letters on a subject he or she must open a file on it. Another tactic would be to boycott Financial Institutions involved in the issue of the student loans company.

An emergency motion was put forward towards the end of the meeting to ban Price-Waterhouse, the chartered accountants who compiled the feasibility report into student loans, from the Imperial College Union Careers Fair. The Union did not believe the report to be factually correct and claimed that it had been written according to the dictate of the Department of Education and Science.

It was also decided to inform other companies at the Careers Fair, other student unions and career advisers of the reason for this ban. There were one hundred students at the meeting, dwindling to fifty at the end. There were only six first year students—probably the people that will be most affected by the loans proposals. Neil McCluskey said this apathy was 'very disappointing'. Mr McCluskey is in the process of writing letters to the head of departments at Imperial College and to MPs to arrange interviews for today during the student loans debate in the House of Commons. This lobby will include students from St Mary's Hospital Medical School.

The House of Commons debate has been called by the Government opposition. Few Conservative MPs are expected to attend. The bill on Student Loans will appear in November's Queen's speech.



Issue 846 Friday 20th October



Small Ads What's On

ADVERTISE IN THE FELIX SMALL ADS SECTION FREE IF YOU ARE A MEMBER OF IMPERIAL COLLEGE UNION

ANNOUNCMENTS

• Could everyone who left interesting objects in the Union Building after Monopoly please remove them (especially the door). Love and twiglets, Hal.

• Singers needed of all voices and abilities for production of Utopia Ltd by Gilbert & Sullivan. Rehearsals: 7.30pm Tuesday evenings, Union Concert Hall. No auditions for chorus.

● Bean's Run—Monday 23rd October. Runners leave Holbein 7.00pm. All members welcome.

• Operatic Society auditions for Utopia Wednesday 25th October. Further information from Sue Foister on 7406.

• Would you be interested in Tang Soo Do Club? (Korean Martial Art) If so, please contact Monchi in Maths 2.

• Imperial College Union Jewish Society is having a meeting on Tuesday 24 October at 1.30pm in the Union Senior Common Room. There will be a campaign talk by SACSJ, 'Students and Academics Campaign for Soviet Jewry'.

• Hockey. Any budding hockey superstars still welcome. The Wobblers.

• The Wobblers want you! Internal mail ICHC, IC Union.

• Like mixed events? Play hockey.

• Could all people interested in getting involved in the smash West End hit 'Woyzek' contact Ramin Nakisa c/o the FELIX Office. We need a stage manager, producer, lighting operators, sound operators, costume, make-up, set design, lighting design and all general technical help.

• **Vietnamese** Society—Interested in forming one? Contact Long Huynh, EE 3.

• Join the Japanese Society. Anybody who is interested, please contact K Kaneko, Physics (98202) or K Yokota, Mech Eng (6265).

ACCOMMODATION

• Large single room in Hounslow to let. £38 pw plus bills. Contact Chris Shaw, Maths 2.

• Single bedroom (furnished). Edmonton, Ponders End, London N9. £35 pw (or offer). Phone 01-443 2996 (after 6pm).

FOR SALE & WANTED

• Commemoration Ball ticket wanted will pay £100. Contact D Harper on 7532.

• For sale BBC Micro (Model B) plus 80 track disc drive. Boxed as new £200 (no offers). Mark on 6671.

• 3.5" disks. Double density/double sided fro Amiga, Atari, Mac and IBM PC. Only 75p each 100% error free. Contact Wouter van Hulten, DoC 2.

WORK

• Gain experience and earn £1000 working in the USA next summer. Contac G Narine, Physics 2.

PERSONAL

• Q: What's Weeks got that Garden hasn't?

• A: A dating agency.

● Date for a Weeks: Female PG whose interests include poker and nerve gas seeks 6ft 6in (?) Norwegian blonde. Ref M1n. Female UG seks DoC 3rd year for coursework and long term answers. Ref M/Ella. Male subwarden seeks sense of humour (Americans considered but serious replies only please). Ref M.A.R.K. All replies in confidence to Weeks Hall noticeboard.

AN UP-TO-THE-MINUTE GUIDE TO EVENTS IN AND AROUND IMPERIAL COLLEGE

FRIDAY

SATURDAY

Southside Gym. Beginners Class.

SUNDAY

RockSoc Meeting......12.30pm

MONDAY

Southside Upper Lounge. Interested in any form of Rock Music? Come along and have a beer. ICCAG Meeting......12.45pm Southside Upper Lounge. Southside Gym with Vicky. Beginners Ballroom......6.00pm JCR. Dance Club. Lounge or SCR. Prince's Gardens Sports Centre. All levels of ability welcome. Downtown (IC Radio)......7.00pm Entertainment and what's on guide. Advanced Ballroom......7.00pm WellSoc Meeting......7.30pm Physics LT1. 'Life in the Universe' by Prof N.C. Wickramasinghe. Karate Practice......7.30pm Southside Gym. Water Polo Session......7.30pm Prince's Gardens Sports Centre. All levels of ability welcome. Latin American Dance......7.45pm

Medals in Ballroom.....8.00pm

Lounge or SCR. All levels.

TUESDAY

IOLODAI
Sailing Club Meeting12.30pm
Southside Lounge for 'Guinness and Gossip'.
ICU Radio Modellers12.30pm
Southside Lounge.
Riding Club Meeting12.30pm
Southside Lounge.
Speaker Meeting1.00pm
Physics LT2. 'Women Astronomers' Dr Ann Smith.
Ents Meeting1.00pm
Union Lounge.
ICU Radio Modellers5.30pm
Mech Eng. Student training workshop.
Keep Fit
Southside Gym with Janet.
Wine Tasting
Union Lounge, anyone welcome.
Judo
Union Gym.
SFSoc Film7.00pm
ME 220. 'Dead Ringers', 50p members (£1.50 to
join).
Intermediate Ballroom7.00pm
JCR. Dance Club
OpSoc Rehearsal7.30pm
Union Concert Hall. New members welcome for
rehearsals of Gilbert & Sullivan 'Utopia Ltd'.
Beginners Ballroom8.00pm
JCR.

WEDNESDAY

Sailing Club Meeting	12.30pm
Outside Southside for sailing.	
Keep Fit	12.30pm
Southside Gym with Vicky.	
Wing Chun Kung Fu	.1.00pm
Union Gym. Beginners lessons.	
Intermediate Rock'n'Roll	.2.15pm
SCR. Dance Club.	
Ten Pin Bowling	.2.20pm
Meet outside Chem Eng/Aero.	erar d
Beginner's Rock 'n' Roll	.3.15pm
SCR.	
Jazz Dance	.3.30pm
Union Gym.	
Wu Shu Kwan	.7.30pm
Union Gym. Experts class.	ggeen
FREE DISCO	.9.00pm
In the Union Lounge Nightclub until 1am.	

THURSDAY

INUNSUAT	
Balloon Club Meeting	1.00pm
Southside Upper Lounge. Come and che	eck us out,
sign up for a weekend in the sky.	
Keep Fit	5.30pm
Southside Gym with Alice.	of toestament
Judo	6.30pm
Union Gym.	Chald hal
Karate Practice	7.30pm
Southside Gym. IC Radio Disco.	8.30pm
Next to Southside Bar.	mahanini odt
ICCAG Soup Run	9.00pm
Meet Week's Hall Basement Kitchen, Deli	
London's down and outs.	

Of course, you won't be able to afford this when loans come in.

The Mighty Lemon Drops recently toured the UK to promote their latest album, Laughter. Neil Lavitt and Susan Appleby interviewed them before they went on stage at the Dominion Theatre last Saturday.

The Mighty Lemon Drops



The Mighty Lemon Drops formed in Wolverhampton in 1985. Known for a distinctly abrasive style of pop, they were soon playing to capacity crowds up and down the United Kingdom. This initial success culmunated in the release of NME's compilation album on which the track Happy Head caused no less than nine record companies to show interest. Since then however, despite popularity in the USA they have never achieved their previous standing in the UK.

'What the *Mighty Lemon Drops* have achieved in Britain is through our own efforts and the music press has never hyped us.'

A very bitter comment it seems, surprisingly so from the relaxed and extremely friendly figure of guitarist Dave Newton. It was clear though that there was a lot of dislike at the way in which the press has reacted to their passage through the rock 'n' roll business, especially in Britain.

Dave feels early comparisons with *Echo and the Bunnymen* were press hyped and completely unjustified.

'The similarities between us and the Bunnymen is based on the fact that we are a four piece guitar band which draws our inspiration from bands of the late sixties, *The Doors* and *The Velvet Underground*.'

Even today the press has not improved, a two-page interview with NME was edited down to half a page; this they believe is due to NME's editor disliking them.

Only when the *Lemon Drops* went to the States did they begin to lose favour with the UK music press. The States however proved very successful for them with initial sell out tours and hit singles culminating in a number one college album in the form of *World Without End*. The band appear very modest about their success in America, attributing it mainly to hard touring and early success which has allowed them prime radio play. They claim that Americans are less bothered about being hip and that the music is the most important thing, whereas in the UK the reverse is true. Despite being extremely vague about their audiences, the New York Ritz was the best venue they have ever played.

In the latter part of 1988 and early 1989 the *Lemon Drops* have toured the world, with three months in America as well as touring Europe. The band has also been to Brazil where they managed to afford the most expensive hotel in Rio de Janeiro, only playing to the

more afluent of Brazilians. This is a great contrast to their British audiences.

Dave, as band guitarist, is also responsible for the writing, especially on their last album titled *Laughter*. Prior to this he was helped by ex-bassist Tony until he was asked to leave by the other members of the band. This was necessary, Dave feels, because he was musically holding the band back and his creativity had gone as far as it could go. He was replaced by the latest bassist Marcus Williams who Dave is very happy with.

When asked about the lyrics Dave appeared very vague, even suggesting that they were about nothing at all, and when pushed only suggested that they were 'non-directive, and not about my emotions and problems, perhaps using other peoples problems as a source of inspiration'.

Laughter was one of the first albums to be recorded in Peter Gabriel's Real World Studios in Bath, Avon. The band feel that it is a definite progression, although it won't shock. The title was chosen in an attempt to expel the previous gloomy image of the band created to emphasise a new 'up' nature to themselves.

Their creative confidence in *Laughter* may have had something to do with the Real World Studios, which Keith describes as being 'the perfect recording environment based upon an old mill with a glass floor and a stream running underneath.' They were one of the first bands to record in it and subsequently got a reduced rate.

The Lemon Drops claim that they would never intentionally search out success, but in the same breath claimed that they could handle it and would enjoy appearances on Top of the Pops and all the associated media coverage. They make a living from record company advances and live on a day-to-day basis, never looking too far forward. Despite this they are looking forward to touring Europe in December followed by the States again in January. No new material has been written. Dave claims that he cannot write on tour as he is usually either asleep on drunk, each of which are difficult states in which to write.

We look forward to hearing from this band who appear to be making their last big push for UK success. Hope you have stamina boys, you've a difficult hill to climb.

N.E.M.L

Interview recorded in association with Susan Appleby of IC Radio. The interview will be broadcast at 7.00pm on October 30th.

The Dominion Theatre is an extremely plush setting for a gig by *The Mighty Lemon Drops*. What was more surprising was that the average age of the following had to be under 20, most of them probably students.

The gig started with *The Family Cat*, a five piece band consisting of three guitarists, a bassist and a drummer. The result was a sound that was very abrasive but very rhythmic and melodic. A lot of this had to be attributed to some excellent lead guitar work and a very ingenious drummer who managed to keep my feet tapping on practically every song. Their set seemed to progress very quickly and they were no sooner on stage than they had gone, no encore, a pity really.

After what seemed like an eternity the lights went down, the audience rose, and behind the rising stalls and net curtain the *Mighty Lemon Drops* appeared. The opening song *At Midnight* was a very uninteresting piece, followed by what was the best song of the night; the 1986 *Happy Head*. This was the only song which had my full attention.

As the concert progessed, my mind wondered more and more away from the music and more and more to what had happened at the Geology Freshers' dinner the previous night.

In summary I have to say this was a very mediocre performance; a previous press article described them as more *lemon* than *mighty*. This is very true. The lighting show was uninteresting and unnecessary and more than anything Paul Marsh's vocals became irritating to the point where I had to leave three quarters of the way through.

NEMI

Starship

I wasn't sure what to expect from the new Starship. They have replaced two members of the band since their last LP, but the style of Love Among the Cannibals was always on my shortlist.

The overriding thing about this album is its overproduced and commercialised sound, with chorus and multitracking of the vocals very much evident. This led to much of it being indistinguishable from the rest, especially on side one where no particular track stood out on its own.

A track which shows promise is the title track which has a more complex 'jungle' rhythm and syncopated bass line, breaking the monotony of side one but unfortunately doesn't seem to get anywhere.

We Dream in Colour is also a change because it isn't a song about love, a rare occurence on this album. It's pretty good turned up loud and could have the makings of a single if it wasn't for the 'atmospheric' start and over-repeated chorus which stretch it out to 6.27 mins.

After that the album goes right downhill again with a totally abysmal song *Healing Waters* and *Blaze of Love* which sounds like a mixture of all the American pop songs I've every heard.

It's taken *Starship* four years to get around to writing a new album and, although their music is certainly more substantial than on *Knee Deep in the Hoopla*, it still rates as a run-of-the-mill record without the inventiveness of *Bon Jovi* and therefore doomed to fail.

Ben Gladwyn.

ueen—Rare Live Gunfire I

At last a release by Queen where their talent is what counts and not the high-tech production.

After a small excerpt from Live Aid the title sequence opens up to the tune of I Want it All, thankfully the only track from The Miracle as this is not a promo for their new album (which is beyond all hope anyway) but a history of Queen in their element-live

It's got all the 'classic' tracks on it as you'd expect, (Killer Queen, We Are the Champions, etc) and quite a few I'd never seen live before, eg Liar (even a bit of the '73 rehearsal-check out the blouses!) and Stone Cold Crazy at Hammy Odeon in '74. These '74 performances at the Rainbow Theatre and Hammy are the closest I've ever got to the real Queen on video full of energy and atmosphere, the latter being harder to capture when you're filming a stadium show with an audience of 250,000.

A noticeable thing about these live shows is the

decline of Freddy's voice over the years, it gets harsher, he tends to shout out the lyrics more and drops out of tune. This cannot be said about Brian May's guitar work however, which stays immaculate all the way through.

The camera work is generally good, but the most irritating thing in the video is the cutting together of three concerts in quick succession through large portions of some songs, especially in Keep Yourself Alive, where it is hard to keep track of where you are. This ruins all the performances.

Don't let this criticism put you off from getting to see it at some time though-if all the Queen you know dates from The Works then you need to see Queen in their early prime. For dedicated fans this is a worthy addition to your collection.

Finally, see if you can spot Kevin McCann's hat being worn by Brian May, it's in there somewhere!

Ben Gladwyn.

Seasons End

Are Marillion more than just adept, yet faceless, backing musicians for their erstwhile lead singer, Fish? Is this, their 'difficult' fifth album, the change in direction that it is being claimed to be? ('Progressive rockers never die, they just change direction.') To quote a lyric from Misplaced Childhood, 'Does anybody care anymore?'.

It is immediately apparent that this is a 'new' sound as they pinch riffs from groups other than Genesis. King of Sunset Town is the opening to Bat Out of Hell and The Space is Ozzy Osbourne's Diary of a Mad Man. Elsewhere, Clannad (Easter), Rush and popmetal in general are evoked; but the general impression reeks, uncannily of Foreigner, partly because of Steve Hogorth's vocals.

This is not to say that their latest album is all bad. They still manage to change tempo at least twice in every song and Fish has taken much of the depressing subject matter with him. Steve Rothery's guitar is refreshing, although it is developing a nasty metallic taste at times, and Mark Kelly contributes lush keyboards that support the song rather than swallowing it.

Hogarth's voice is not always foremost in the mix, and although he claims the Marillion fans have already accepted him it remains to be seen whether he can



match the enormous stage presence of his Scottish predecessor

Season's End is accomplished yet devoid of the emotion of their earlier work. It is their most MoR piece to date, but they could forefeit older fans simply because it lacks fresh ideas and revisits over-familiar territory. One hopes that this is a transitional and not a terminal ailment.

CDL.

Gunfire Dance II

Last Thursday saw the first Rocksoc Disco and Band of the year, with brummy band Gunfire Dance playing to a packed (OK, moderately full) Union Lounge.

Your illustrious DP, Dai Williams, set the evening cooking with a great selection of melodic and power rock (following his own good taste), together with a sprinkling of aural assualt for the brain dead. Notable was Rocksoc President Nick Foster's attempted selfdecapitation to the melodious strains of Metallica's ...and justice for all'

Gunfire Dance played a well-received one hour set. Page 4

Jeff's Aerosmithy guitar was well supported by Daz's low slung bass, energy and enthusiasm were provided by frontman Art, and the whole was marvelously metronomed by Ozzy's skin-bashing.

In all, a good evening, even if nobody liked the free beer-no more gratis Fosters for you ungrateful b'stards! Next time a bar instead.

For information on forthcoming events, Rocksoc meets every Monday lunchtime in Southside Upper Lounge.

JC Graham.

Well. things can only get better, 'cos they sure as hell can't get any worse!

The first shock was the band drinking their Newquay Brown in the Snack Bar. Their jeans were of the spray-on variety, tastefully decorated with the obligatory rips and scarves tied around their knees? (Well if you like it, lads!) And one of them had pink cowboy boots ('nuff said).

The shirts consisted of more rips than material, presumably to show off their (not so) manly bodies!! By the time they got on stage, their lead singer was extremely pissed. Although whether that was the reason for his total lack of stage presence, and inability to sing is debatable. He pranced around the stage making a complete prat of himself, but never mind! (What can you expect for £100).

For musical ability, Gunfire Dance score O, on entertainment....well the kids seemed to enjoy themselves, probably because their drummer was quite good, but then it's difficult to play the drums out of tune.

Personally, I wouldn't see them again, but that's my opinion, and plenty of other people guite enjoyed themselves! Maybe eight pints is a necessary prerequisite!!

Name withheld by request.

Liza Minelli Results

It is trendy to like Liza now she's been subjected to the Midas touch of the Pet Shop Boys. Having enjoyed chart success with the first single from Results, Losing My Mind, in which she gushingly gave us her all to a Eurobeat backdrop, the far superior second single Don't Drop Bombs turned out to be one itself and seems to have disappeared without overtroubling Gallup.

The LP as a whole is an uneasy mixture of predictable ballads full of schmaltz and potential disco smashes. The Pet Shop Boys have supplied seven of the ten songs, five of them new. Of the others Rent is given full Broadway treatment and an orchestra. It unfortunately suffers as a result, losing the idiosyncratic attraction of Neil Tennant's plaintive vocals. (WOT!) Another 'ex-PSB libris' song, Tonight is Forever works better in this format, although it will probably now appear on an Elaine Page album.

The forgettable So Sorry I Said and a reworking of Love Pains are the low points; MOR fillers which show how poor the album could have been without the help of Chris Lowe's skills at conjuring up dance grooves from a Fairlight. The most impressive of the dance numbers must be the most unlikely. Tanita Tikaram's moody Twist in my Sobriety is transformed into a groovy stomper complete with scratching and rapping. Courtney Pine guests with some scintillating soprano saxophone on If There Was Love and the final track I Can't Say Goodnight.

Despite the high calibre of its contributors Results never quite adds up to the sum of its parts. It will perhaps be remembered as a brave departure which didn't quite succeed, but will probably make her a lot of money despite its failings.

Old Gringo

Of course you won't be able to afford any of this if loans come

Release date 20th October

If your idea of an epic movie is one with a cast of hundreds, a foreign location and orchestral title music then this film lives up to its bold claim. Unfortunately, if you require a meaningful storyline to stir strong emotion in you, tough!

Peck plays Ambrose Bierce; the legendary American journalist with the acid pen, who disappeared in Mexico. Smits is a young revolutionary general who uses Fonda, a governess, as a ploy to free his home town from rich landowners. This leads to an almost dramatic battle which the revolutionaries win, naturally. From there on the film goes downhill, Smits seduces Fonda, and at the same time is unable to escape his past which prevents him from joining the rest of the revolutionaries in Mexico. This ultimately causes his downfall and Peck's too, as he tries to help Smits leave the past.

Peck acts well and plays a more philosophical and sedate Bierce, this is probably more to do with the fact that the script is written in his favour and the rest of the cast are not particularly special. Fonda's narration at the end is very annoying. The scene in which Smits shoots his own horse is probably the most dramatic in the whole film and after this event I didn't care what happened to Smits. Mind you I can't say that I was too concerned from the very beginning either.



The Cook, the Thief, his Wife & her Lover

Gate Cinema, Notting Hill Gate £4.25 Lumiere, St Martin's Lane £4.50

This film is another of Peter Greenaway's (A Zed & Two Noughts, Drowning by Numbers etc.) visual and aural masterpieces. It is laced with his constant themes of death, decay and corruption. In this film it is the colour of the images that is all important. As the action switches from one scene to another the lighting changes from blue to green to red to whiteand the leading characters change costume accordingly.

The plot is simple, although up to Greenaway's usual slightly surreal standards. The Cook (Richard Bohringer) runs a restaurant which is patronised, or terrorised, by the Thief (Michael Gambon), a bullying gangster who is accompanied by his beautiful, long suffering Wife (Helen Mirren). Sitting in the same restaurant, watching the Thief's humiliation of all around him, is the book collector who becomes the Wife's Lover (Alan Howard).

Their bizarre couplings take place in the gleaming white restaurant Ladies, the murky green-lit kitchen pantry and even in the restaurant's cold store. The Thief of course eventually discovers why his wife spends so much of each meal 'in the Ladies', but I will

not spoil the denoument of the film as other reviewers (Film 89) have done. Suffice to say, in a film obsessed with food and sex, it is a timely and fitting revenge.

The film is a sensory bombardment. The platters of food in the restaurant, the hellish atmosphere evoked by the red drapes and devil-like prescence of the Thief contrast with the gleaming silence of the lavatories and the dangerous atmosphere of the blue-lit carpark. There is extreme brutality, so much so that I wondered at times if I was watching a 'blood and guts' film rather than an 'art' film, but the violence is not misplaced. Michael Gambon's performance is brilliant in evoking a monstrously vulgar personality and the other leading actors support him admirably. Behind it all is another obsessive, hypnotic, overwhelming

It is hard to know whether to recommend this film. It is not an easy evening's viewing: the violence is not banal but highly disturbing and calculated. Precisely because of that, and the genius of its conception and design, this must be one of the best films of the year.

Liz W.

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Tasty, hot vegetarian and meat dishes every day

also a stunning variety of salads, pizzas, burgers and

Rounded off with sandwiches, yummy cakes and fresh coffee THE UNION BUILDING, BEIT QUAD

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or Chih Y. Wong, Chemistry PG, 262 2081 ext 514

In the first of a hopefully-not-too-occasional series of articles on research being done here, at Imperial College, Professor Charles Rees of the Department of Chemistry describes his work on a subject that spans organic and inorganic chemistry. It could be described as chemistry with no loose ends—the chemistry of rings of atoms...

Chemistry in circles

Organic chemistry, the chemistry of carbon compounds is the chemistry of life. Its unique and necessary feature for life is the limitless ability of carbon (C) atoms to form themselves into long and branched chains, rings and three dimensional networks. These carbon atom frameworks can then combine with most of the other chemical elements, though hydrogen (H), oxygen (O) and nitrogen (N) are the most common, generating an almost infinite number of possible structures.

Although all organic compounds came originally from nature, many more have now been made in chemical laboratories and most of the 9 million compounds described in the Chemical Abstracts Database are synthetic organic compounds. About half of these belong to one vast class called 'heterocyclic'. These are rings of carbon atoms containing at least one other element, O, N and sulphur (S) being the most common. There is a limitless number of such compounds: the rings can be of any size, from three membered upwards, and the non-carbon 'hetero' atoms can be chosen from most of the other elements.

But why have millions of these compounds been produced? Why are new ones still being made, worldwide, at a rate of one every few minutes. There are several reasons: heterocyclic compounds are widely distributed throughout nature and are essential for life; they play a vital role in the metabolism of all living cells. The pyrimidine and purine bases of DNA and RNA, some of the essential amino acids, many vitamins, co-enzymes and hormones, and chlorophyll and haemoglobin are all heterocyclic compounds.

They are extremely useful, and profitable. Many biologically active substances are heterocyclic, including natural products such as penicillin and morphine. Synthetic heterocyclic compounds range from anticancer drugs to solvents. Of the 10 biggest selling pharmaceuticals, all are cyclic and 7 are heterocyclic. Half of Glaxo's recently announced £1 billion profit came from just one heterocyclic compound, the anti-ulcer agent Ranitidine.

Heterocyclic compounds are important theoretically and their unlimited flexibility can produce compounds with almost any desired physical, chemical or biological property. We only need to be clever enough to design and construct the right sequence.

Traditionally the design of heterocyclic compounds starts with and appropriate all-carbon ring, like benzene, and considers the effect of introducing heteroatoms into this, one at a time. This works surprisingly well for the first few heteroatoms but then starts to break down badly. The number of available, stable molecules rapidly drops when there is a large proportion of heteroatoms. So, in spite of the vast number of known heterocyclic compounds, there is a big gap in our knowledge of stable, and hence useful compounds. This is gap which we are trying to fill in

$$CH_3$$
 N
 CH_2
 CH_2
 CH_2
 CH_2
 CH_3
 $CH_$

Ranitidine: an heterocyclic anti-ulcer drug worth £1 million per day to its manufacturers.

the Hofmann Lab in the Chemistry Department at Imperial College.

Our approach is the exact opposite of that described above. We start with stable rings composed wholly of heteroatoms and study the effects of introducing carbon atoms, one at a time. We hoped that if the starting rings were stable enough we could modify them in this way, producing organic compounds which would still be stable in spite of their unusual structure. This simple idea has proved to be very successful and, 8 Ph.D theses and 25 papers later, we have established the main ground rules in this new area of chemistry which straddles organic and inorganic.

With this approach we could, in principle, start with cyclic structures from anywhere in the Periodic Table. We actually started with compounds of sulphur and nitrogen, two of the most important heteroatoms. Several such compounds are known, with a wide variety of ring sizes and shapes. Their (inorganic) chemistry has been well worked out and, fortunately, we have an expert in this field, Dr Derek Woolins, in the department. Many of these inorganic compounds have delocalised structures, structures in which the individual electrons have freed themselves from the atoms and are flowing around the rings. This promises well for compound stability and for many practical

applications such as dyestuffs and pigments and, particularly, conductors. Indeed the ultimate delocalised structure in this area is a linear polymer of alternating sulphur and nitrogen atoms, polysulphur-nitride $((SN)_n)$, a highly conducting anisotropic 'metal' which becomes superconducting at sufficiently low temperatures. One of the aims of our work is to improve on the properties of this polymer by incorporating the atomic framework into the much more stable heterocyclic rings that we have discovered whilst maintaining the totally delocalised electron structure.

This is still for the future. What we have done so far is to establish chemical methods for opening the sulphur-nitrogen rings, inserting a carbon atom or two and snapping the ring shut again. We have discovered a range of fascinating 5 to 8 membered heterocyclic rings which are highly stable and beautifully coloured. They are quite unlike anything observed in nature, or the lab, before. Indeed one of the pleasures of being a research student working on synthetic chemistry is the opportunity to make entirely new materials and to be the first person to see and handle them - long before your supervisor!

It now remains to be seen if our compounds will be as practically useful as they are theoretically novel.

$$S = N$$
 $S = N$
 $S = N$
 $S = N$

Polysulphur-nitride: a highly reactive conducting 'metal' made from two non-metals, adding heterocyclic rings may make it more stable.

This Week

• As politicians, including the French Prime Minister Michel Rocard, call for Antarctica to be made an international nature reserve, researchers at the British Antarctic Survey's Rothera base are suffering from a thaw. Recent measurements show that there has recently been significant loss of snow and ice, according to a report released by the Natural Environment Research Council. Mean summer temperatures at the base have increased by 1 degree

Computer models predict that the poles will be the first to suffer from global warming. Despite this, experts warn against blaming all the rise on the greenhouse effect. The Earth goes through a natural cycle of warming and cooling and it is believed that the temperature of the planet is now reaching a peak. There is still concern that the presence of greenhouse gases in the atmosphere may delay any eventual downturn.

- Despite protests from environmental groups, the World Bank has agreed to help fund the gigantic Indian Narmada Sagar-Sardar Sarovar dam project. The scheme will block several major rivers and includes plans for 30 major dams to irrigate 2 million hectares of land and provide 2500 MW of electrical power. At the moment, the Bank is providing only 10% of the total finance and, pressure groups claim, as other sources of funding are few and far between the project could run out of money before it is completed, possibly within 2 or 3 years.
- Faith healers and their ilk often preach that health is a state of mind and that, for wont of a better term, positive thinking can cure diseases. Now researchers are hoping to put this theory on a firmer footing. The European Science Foundation has provided \$91,000 to set up a network of researchers studying 'neuroimmunomodulation', the connection between the immune system and the central nervous system, to see if one can affect the other.
- The Earth's crust is at least 4 billion years old according to Samuel Bowring of Washington University, St. Louis. He, and colleagues from the Australian National University in Canberra, have dated samples of surface rock using a machine called SHRIMP, the Sensitive, High-Resolution, Ion Microprobe, and found them to be 3.96 billion years old. There is evidence of still older rocks yet to be found and Bowring believes that the planet's crust could be up to 4.3 billion years old. The accepted age of the Earth itself is 'only' 4.5 billion years.
- ●The Natural History Museum may have some interesting plans for the future. In true Thatcherite style they have called in the ad-men and the design consultants, gained a new logo and even put some money, well £5 million, on one side for some new exhibitions. The museum is looking for inspiration from America: staff have been sent on study trips to one of the US's greatest cultural centres, Disneyland.

'Dearie me', said Mrs Jolly Hockey-Sticks as she reached for the sherry bottle, 'There are so many staff in the Citizens' Office these days that I hardly know who to boss about first. Thank goodness I've still got Sidney Spanker around to give me a hand.'

Sidney Spanker had been Head Citizen two years ago but he still liked to rush about Cheapskate telling everybody how important he was. Most of all he liked to tell Jackie Skirt, the Citizen in Charge of Wellfeeling, what to do, because he thought she was very pretty.

Unfortunately, Spanker was nowhere to be seen. 'He's probably playing with Wendy and GMT,' sighed Jolly Hockey-Sticks. She walked gloomily around the office, on her way treading on some citizens who were waiting to use the smudging machine.

In one corner of the room Dai Rocking, the Deputy Head Citizen, was installing flashing lights and a record deck. 'Do you know where Sidney is, Dai?' asked Jolly Hockey-Sticks. 'No,' he shouted above the disco beat, 'But Fiona Knickerless and Neil Smug have gone to a very important meeting with Derek Dash.

Mrs Jolly Hockey-Sticks was very annoyed about this because they hadn't asked her if they could go first. 'Perhaps it's time I left Cheapskate,' she mused sadly. 'On the other hand, I could have another glass of sherry...'

Meanwhile, in the Baron's Office, Neil Smug, the Head Citizen, was shouting at Derek Dash. 'Listen Derek, it's not fair of you to charge the citizens so much money for the Comic Shop. You know very well that half of the comics are useless—they were out of date when you were a citizen!' he exclaimed.

'Oh dear,' said Derek. He had hoped that the citizens wouldn't notice because he wanted the money so that he could have his go-karting rink re-surfaced.

'And what's more,' chipped in Benj Trainers, the Citizen in Charge of Games, 'All our playing fields at Gravlington have been ploughed up and now even Sherpa Club can't climb over the bumps.'

'Oh dear,' said Derek. Then he had a bright idea. 'Perhaps you could have an $\rm H_2SO_4$ House Party there and all the citizens' dancing would trample it flat. You could even charge an entrance fee and give the proceeds to help the Chinese citizens.'

Smug and Trainers glowered at him. 'Oh dear,' thought Derek. 'I wish Mad Dash were here. She's terribly good at getting people enthusiastic about things.'

John Secretary took his ear away from the keyhole and tiptoed down the corridor. He was giggling so much he'd had to stuff a 'Souvenir of Cheapskate' handkerchief into his mouth.

It was Secretary's job to be crafty but he'd become rather fond of the citizens. Sometimes this made him feel guilty about trying to trick them. More importantly, though, he was glad to see Derek being made to look silly.'

'He's always bossed me around and pretended that he ran Cheapskate, when I'm the one who does all the important work,' thought Secretary. 'Now that I'm retiring to Martinique, I could get my own back once and for all. Perhaps I could even help the citizens...'

- Will Jolly Hockey-Sticks leave any sherry for Sidney Spanker?
- Does John Secretary have something up his sleeve?
- Is it just his arm?
- All may be revealed in the next instalment of **The Baron of Cheapskate**.



Sez Wilkinson and Rhydian Hapgood present a discussion of the risks involved.

Cancer—the hazards

There can be few people at College who have not met, or at some stage, been in contact with a cancer sufferer. There exists an abundance of novels centering around the personal experiences of suffering cancer; testimonies which express the extreme psychological and emotional consequences of the disease. This feature does not set out to evoke tears or to stimulate emotions. Rather it aims to inform the reader from a scientific viewpoint of factors associated with the occurence of the disease.

The Statistics

Statistical measurements of the frequency of cancer within and between populations are an important part of the study of the disease and have produced much information on its possible causes. The two measures of frequency most commonly employed are mortality and incidence. Mortality is the annual rate of death attributed to cancer, while incidence is the frequency of new cases arising in the population. As a cause of death, cancer is second only to heart disease in the developed world and is showing an increasing incidence. To some extent this is due to the longevity

enjoyed by the population in a period when fatal infectious diseases have been largely eradicated and to more refined diagnostic procedures now in use. Even when these points are taken into account, however, some cancers, such as cancer of the lung, show real increases. The rising frequency of cancer is presumably the result of our increased exposure to carcinogenic (cancer-causing) agents.

Within a population the incidence of cancer varies widely with age, sex, site of origin and various environmental factors. The latter, in particular, provides valuable information on the basic factors that contribute to the occurence of cancer. Further, there are sometimes wide variations when different populations are compared and this geographical dependence of certain cancers is similarly indicative of important causative factors in the environment.

Age

For most cancers, incidence in the population increases with age. Some, however, show peculiarly high incidence in childhood, notably acute leukaemia and tumours of the central nervous system. For this

reason, the overall incidence of cancer is higher in the first five years of life than in the next two five-year periods.

Sex

In childhood and over 60 years of age, males are more affected than females, between 30 and 60 years the overall incidence is generally higher in famales, because of the risk of cervical and breast cancer during this period. However, mortality is higher in males in most age groups, because of their higher frequency of cancer of low curability (lung, stomach); the common cancers of women (breast, cervix) are more readily cured. The frequency of some malignancies differ markedly in the two sexes. Thus cancer of the lung and oesophagus are considerably more frequent in males. For lung cancer the ratio of males to females affected can be as high as 10:1. Stomach cancer and leukaemia are also more common in men, though rather less strikingly so. On the other hand, cancer of the breast, reproductive organs and thyroids are more often found in women. Other tumours are of equal occurence in both sexes.

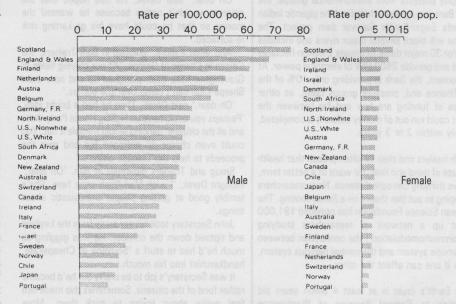
Environmental factors

Personal Habits

One of the most important examples of an environmental contribution to cancer is the association of lung cancer with cigarette smoking. In several large-scale studies, the mortality from lung cancer has shown to be over ten times greater in smokers than non-smokers and to be proportional to the number of cigarettes smoked and the number of years over which smoking has been practised. Smoking also leads to increased mortality from cancers of the larynx, oral cavity, oesophagus and bladder. Similarly, air pollution may account for the greater incidence of lung tumours among city dwellers than in the country. Sexual experience influences the incidence of certain cancers. Cervical cancer is associated with early sexual relations, an early age of marriage and frequency of births, though with respect to the last point it seems that the act of intercourse rather than pregnancy is the important factor. Cervical cancer shows its lowest incidence among nuns, virgins and Jewish women. Among the Jews, the practice of circumcision may be one factor responsible for the low frequency of cervical cancer. Breast cancer shows the reverse correlation with sexual experience in that it is less frequent among women with a large number of children.

Diet

Differences in the incidence of cancers of the ailimentary tract (oesophagus, stomach, colon) may be related to dietary components such as salt, smoked food and alcohol. Some pronounced geographical variations in frequencies of these tumours are likely to be the result of different dietary habits in different parts of the world. The association of stomach cancer with low economic status is also likely to be due to dietary factors.



Death rates for lung and related cancers in various countries 1964-65.

Occupation

There are many examples of cancers which are hazards of particular occupations. The sites most frequently affected are the skin, respiratory tract and bladder. That is either the surface with which the cancer-inducing agent first makes contact or that exposed to its active metabolites in urine. Among the early examples of occupational cancers were the observation of cancer in the scrotum of chimney sweep boys and shale-oil cancer in workers in mineral oil distilleries. Bladder cancer was a hazard of the early aniline- and azo-dye industries and is caused by aromatic amines and related substances.

Occupational cancers can be caused by irradiation as well as by chemical carcinogens, illustrative

examples being the skin cancer of the early radiologists and lung cancer among uranium miners.

A large portion of recent occupational cancers are due to asbestos, a fact which has given rise to a great deal of public concern. Public pressure is now leading to a reduction in asbestos levels in industry, schools and homes. Discouraging smoking is also clearly an important step which, if effective, would be of particular benefit to workers in the asbestos industry, as well as to the population at large.

In principle occupational cancers are wholly preventable but in practice, workers will continue to be affected so long as society demands the products of the industries concerned.

FELIX Warning—smoking does cause lung cancer and other serious diseases



TABLE A

Smoking and death rates from lung cancer (per 100,000 population). Source: Kahn (1966) 'The Dorn Study of Smoking and Mortality'.

	AGE GROUP		
Amount Smoked Cigarettes per day	55-64	65-74	
Nil	10	30	
1-9	70	135	
10-20	123	265	
21-39	205	432	
39+	338	696	
Cigars only	20	49	
Pipe only	24	54	

TABLE B

The smoking habits of College personalities

Prof. Eric Ash0
David Smedley (Editor)40
Neil McCluskey (President)0
Fiona Nicholas (Hon Sec)18
Andrew Thompson (Printer)10
Terry Briley (Security)50
Andy Bannister (Felix hack)15

The results of exhaustive epidemiological studies since 1950 have amply demonstrated the causal association between cigarette smoking and cancer of the lung. In initial retrospective studies, in which smoking habits of known lung cancer patients were ascertained and compared with control groups, it was shown that the proportion of patients who were nonsmokers was extremely small (about 1%) while more than half had been heavy smokers over a number of years. Prospective studies, in which populations were first characterised in terms of tobacco usage and the appearance of lung cancer then followed for a number of years, were even more conclusive. The risk of developing lung cancer was up to thirty times greater in smokers than non-smokers, and was proportional to the number of cigarettes smoked and the duration of the smoking habit. By giving up smoking, the risk could be very much reduced. The mortality in different age groups at various smoking levels is shown in table A. The risks involved in pipe or cigar smoking were very much less than from cigarettes and only about twice that of non-smokers. Cigar and pipe smokers, however, run a considerably higher than average risk of cancer of the lip or oral cavity.

Other aspects of the epidemiology of lung cancer could also be correlated with cigarette smoking. Lung cancer has increased dramatically in the last fifty vears and this can be wholly correlated with increased cigarette consumption. In the UK the death rate for males in the 65-75 age group rose from 36 per 100,000 in 1935 to 650 per 100,000 in 1973. As a result of the long latency in the development of lung cancer the mortality rates in any particular period correlate most closely with the 'per capita' consumption of cigarettes twenty years previously. This is particularly well illustrated by the upward trend of lung cancer in women which began in the 1960's and has continued at a faster rate of increase than in males. In the UK it was unusual for women to smoke before about 1920, and the main increase in women smokers began in the 1940s. After a lag of twenty years, lung cancer began to rise rapidly in women.

The incidence of lung cancer varies around the world, having its highest incidence in the UK where it carries a higher mortality than any other tumour. This variation may be accounted for by the differences in the types of tobacco used in the manufacture of cigarettes in different countries.

The association between smoking and cancer is thus very strong and is most probably the result of the carcinogenic substances in tobacco tar. However, whilst about 10% of heavy smokers die of lung cancer others survive to an advanced age without developing the disease. Cigarette smoking may not, therefore, in itself be a sufficient cause of lung cancer in the absence of some other predisposing influence in the individual. A genetic influence is one possibility and there is evidence for both familial incidence of lung cancer which is independent of cigarette smoking, as well as an iherited tendency to be a smoker or non-smoker.

Don't miss out on this invaluable experience: you may think that three or four years is a long time but it will soon be gone. Start now, today, this weekend.

The British Museum

Born by a Parliamentary act of 1753 its origins and founding material were incepted by the library and collections of Sir Hans Sloane. His collections, bequeathed to the nation, were soon joined by the subsequent acquisition of the Cottanian, Harleian and other libraries, forming a nucleus housed in Montague House by 1759. Rapid expansion ensued in this great institution and led to the construction of the present buildings, designed by Sir Robert Smirke, who also has the Covent Garden Theatre to his name.

Its exhibits are often colossal and this matches the external fabric of contruction in its Doric style, most magnificently exemplified in the Parthenon in Athens. In itself the building is a collection of architectural ideas, opinions and practicality, consuming the passion of a multitude of designers over the course of two and a half centuries. Their own input was directed as much by personal imagination as by public opinion and practicality of use.

To many, the idea of a museum conjures up the excitement of stalking slugs from one end of a garden path to the other, and indeed as a child not only my feet complained bitterly of pain and boredom. However, this background history was surmounted by a recent visit to the British Museum after a lapse of some twelve years.

Britain's largest classical building has acted as the root and parent of many institutions in the course of its life. The best known to you all is the Natural History Museum down the road which transferred to South Kensington in 1881. The British Library also began at Montague House and has now resided on an adjoining site since 1971. The Library, which receives a copy of every publication in the UK (even FELIX), illustrates the problem of collecting in such magnitude. Although its collection of provincial and London newspapers is housed in Colindale, it requires over three miles of new shelving each year and the demand for space is accelerating. A new library is planned in the Kings Cross area with 60ft of subterranian floors before heading skyward.

The British Museum, through its numerous collections of ancient, medaeival and modern objects, not only charts the broader aspects of world history

but, integrally with it, the personal history of its collectors, contributors, patrons and public in modern times. For example the Library's Round Room has played host to Karl Marx, the Kings Library to Macaulay, and Keats found inspiration in contemplating the Elgin Marbles.

The concept of the museum dates back beyond the times of the Ancient Greeks, Egyptian Pharoahs and Roman conquerors, although these people began to put them into a public perspective. Between them they represent three differing aims and ideas. The Greek 'mouseion' had grown out of the shrine of the muses, the Nine Muses being high ranking daughters of Seus and Mnemosyne-the goddess of memory. Initially the shrines were repositories of gifts, then temples of art and finally a collection house of the ingenuity of man. Their climax, as seen in Belenistic times, saw two rivals: Eumenes II and Pergamon and Ptolemy Philadelphus at Alexandria, whose collections illustrated a fine composite structure. Here were libraries, collections of paintings and sculpture residing with colleges for scholars, including critics and poets. Their 'mouseians' had become centres of knowledge and inspiration summed up by the Greek 'encyclopedia' - a complete circle of learning. Roman museums never equalled their Greek counterparts in terms of quality but easily surpassed them by sheer quantity gathered during their plundering of continents. At first, museums were akin to private libraries and as Seneca, a Roman philosopher and tutor to Nero, once commented, they had become as fashionable as a private bath. Roman civic pride showed itself admirable and provided suitable cultural impetus that caused many museums and libraries to become turned over to public use. The Egyptian ideals of Rameses II are eloquently expressed in an inscription over the doorway of his library at Thebes. The legend reads: 'a place of healing for the soul.'

It is from these examples that the British Museum draws its life blood. The libraries of learning, the massive collection of civic memory and artefacts and the divine feeling of satisfaction experienced by today's visitor or pupil. Despite grand, cavernous rooms in simple stone hues and the stillness of

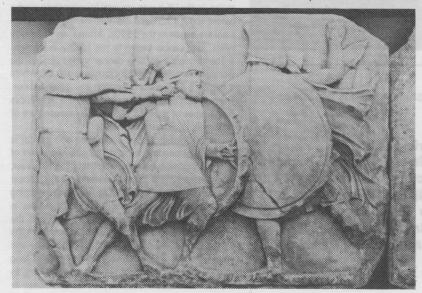
exhibits this place is warm and inviting. An atmosphere able and willing to allow eager hearts and minds to imbibe the pleasures of fine arts and crafts from a massive slice of history.

Snorting horses and warriors clash with titanic beasts in intricate freases. Glorious statues and sculptures which once stood proud stand again, with a little help, exhibiting their artists' grace and the models' courage and dynamism. Egyptian gods look upon you in animal-man amalgamation. And the middle-class life and finery of Trojans and Hadrian's Roman Britain is played out before you.

It is truly inspirational and leaves you on a high. The only sad note is that despite this great effort many artefacts lie in grave-like state, rotting for lack of money and time for preservation. Don't miss out on this invaluable experience: you may think that three or four years is a long time but it will soon be gone. Start now, today, this weekend.

The British Museum is open Monday to Saturday 10.00am to 5.00pm and Sunday 2.30pm to 6.00pm. Admission is free and disabled visitors are well catered for, as are the hungry and the thirsty ones in the comfy café!

It is on Great Russel Street and the nearest tubes are Russel Square and Tottenham Court Road. Telephone 01-636 1555.



Groans at loans

by Neil McCluskey

Imperial College Union has policy that it thinks loans are a bad idea. It is my duty to abide by that policy and formulate campaigns to try and stop the introduction of loans. This job is made much easier by the fact that I am personally dead set against the proposals put in the White Paper.

My personal reasons for being against the loans are on the basis that when the loans come in the standard of living for a student falls well below the minimum standard that the Government believes itself (i.e. either somebody on the Youth Training Scheme (YTS) or an unemployed person). The figures opposite show the drop in standard.

Even this example is grossly understated. Rent in London is usually higher than £50 and travel costs are certainly higher. So ignoring the fact that the Government wishes students to pay for themselves, the total funds available are not even adequate.

My job is to inform you how to go about stopping the White Paper turning into legislation. At the time of reading the White Paper will be in the House of Commons going through what will probably be its final discussion period before being published as a Bill to be introduced in the coming year. Once introduced as a Bill (which could feasibly be Monday if the Government rushed it!!) it will receive its second reading and will go off to committee for amendment. It is important that some action is taken immediately so that ideas are put forward for amendment. I believe the only way to stop this scheme is to put reasoned arguments forward to amend the Bill and thus delay it. If the Bill is delayed for a period of as little as two months the Government will find it virtually impossible to pass the Bill and implement the the necessary infrastructure to enact the Bill. The Government is unlikely to reintroduce the Bill immediately prior to election time!!

As you read this, a number of Union Council members will be attending the debate in the House of Commons and pulling out their local MPs to put

LOANS-COMPARATIVE INCOME EXAMPLES

1. Single person aged 18 on YTS scheme

Receives £29.50 per week allowance. Pays £50 rent (£44 rent, £5.25 rates £0.75 water rates). Pays £6 travel, £3 of which is refunded by the employer. f46 42 Housing benefit entitlement Nett rent to pay £3.58

Available income f29.50 - f3.00 - f3.58 =£22 92

2. U.G. Student aged 18 receiving London grant

Receives £2650pa, pays £50 rent and £6.00 travel. £17.04 Housing benefit entitlement Nett rent to pay f32.96 Available income for living expenses and travel f63.57 per week

£234.00pa is included in the grant for books £120.00pa is included in grant for travel Available income after deducting nett rent & travel £24.61

3. Unemployed single person aged 18

Receives £27.40 income support, pays £50 rent. Actively seeking work thus spends £6.00 on travel Housing benefit entitlement f48.20 Nett rent to pay Available income after deducting net rent & travel £19.60 If this person did not spend anything on travel this figure would be £25.60

4. U.G. student aged 25

Same circumstances as in example 2 Housing benefit entitlement 21.16 Nett rent to pay £28.84 Available income after deducting for rent and travel £30.99

5. Unemployed person aged 25

Same circumstances as example 3	
Receives higher rate of income support	£34.90
Housing benefit entitlement	£48.20
Available income after deducting nett rent & travel	£27.10
Without expenses for travel this becomes	£33.10

6. Student aged 18 London grant and first year loan

Same circumstances as in example 2	
London grant frozen at 1989/90 level	£2650pa
Government loan	£460pa
Total income	£3110pa
After deductions for books	£2876pa
Weekly equivalent for 38 week year	£75.68
Housing benefit entitlement	n/a
Available income after rent and travel	£19.68

All figures are per week unless otherwise stated

forward their case. What you can do is the following:

1. Find out the facts-see me or the other sabbaticals for this information.

2. Formulate your own arguments and opinions and write to your local MP immediately-again we can help you in what to write and how to find out who your MP is.

3. Write to your parents or give us permission to do so. If any student wishes us to send information to their parents (after all it is probably them who will end up paying) then simply drop an A4 envelope with your parents' name and address into the Union Office and we will send off the information.

4. Make sure that for every objection you have there is a viable alternative. The Government is implementing these proposals because they wish to achieve certain objectives, i.e. increase access, reduce expenditure on education. You must come up with viable alternatives, again see us for the ideas.

We can only help you to help yourselves. If all of the above seems too much like hard work then I have absolutely no sympathy with you. I am putting in a lot of work in coordinating this campaign it would be appreciated if for once IC students could make a similar effort. It will be you experiencing the effects of loans, especially if you are in your first year.

Ents muscling in

Tonight sees the welcome return of The Muscle Shoal to the centre of the Imperial social scene, the Union Lounge. The boys played a storming set at last year's Freshers' Week and now with a freshly cut sandwich (sorry, album) behind them, they are eager to unleash their powerful brand of happy rock onto the craziest crowd in town.

They are recently back from a major tour of Europe, Borneo and the US of A. The States are, of course, the inspiration for their name, specifically the small blues town of Muscle Shoal, Alabama where many of the American blues masters made their first

The support slot is filled this evening by Snapes, a funk-pop fusion (gipsy, folk, cajun, zydeco, soca, limbo, narco-thrash-punk, skiffle, acid jazz, hard core) band. They are currently being heavily hyped by EMI who see them as their next ticket to the moon.

To top off the evening, the Union Bar will be open until 1am and of course the Lounge Nightclub possé will be in full effect until 2am with their eclectic mix of esoteric dancey tunes.



Your Friday night won't be complete without grooving the night away in the Union Lounge. Door open at 9pm. Be there!

Soar away with hang gliding

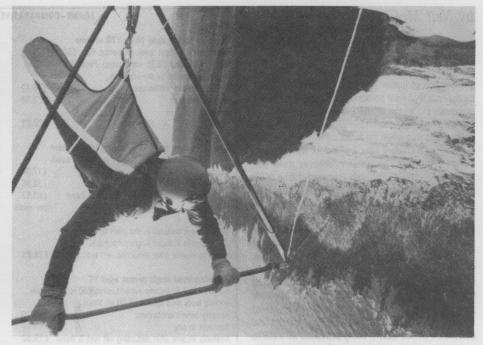
Ever fancied soaring free as a bird, 1,000 feet over the sea with the white cliffs of Beachy Head looming large and jagged only a few hundred feet to your side? Just as you start to think 'Oh shit, I'm not going to make it back to the top', the lift increases and once more the cliff top comes into view. By the time you are back on the ground (having misjudged and overshot your planned landing site twice). The knees are definitely a little weaker than when you took off.

This was how I fell on one of my first soaring flights last year. The the adrenalin rush started to subside. I was definitely glad I had taken the sport up on coming to IC 18 months previously. Nothing else takes you so close to the edge—it's even more exhilarating than sharing a jaccuzi with Patsy Kensit (or Mel Gibson if he's your sort). For sheer thrill value hang gliding can't be beaten.

If you think you can handle it, then drop a note in my pigeonhole, or better still come and meet the club, we'll be in Southside Upper Lounge each Friday from 12.30 to 1.30pm.

The cost to obtain your licence is approximately £100, but after that it's all free—just you and the elements. Happy flying.

Mike Tarry, Aero 3, 352 4007.



Orienteers lost

The first stage of our summer tour took us to the health resort of Font-Romeo, high in the French Pyrennees. The competition took place on five consecutive mornings in different areas of the countryside and amidst stunning mountain scenery. For those who don't know; orienteering consists of using a map to find markers dotted about the landscape, and doing so as quickly as possible. Usually we do this around London parks, so these rocky mountains were quite a challenge. Nevertheless we had some good performances: Dave Knight was well placed on perhaps the toughest day, and William Power was fastest Brit overall in 11th place.

The afternoons were free for recovering, sightseeing and socialising, and we have never been

to a better staged event. There was a wonderfully international atmosphere and we met teams from across the whole of Europe. We even challenged the superfit Scandinavians to a football match—with predictable results!!

The next event was the Swiss 6-days, the first 3 days of competition were held near Lousanne, often in torrential rain. The next 3 days were near Lugano on the Italian border, we eventually arrived there despite some abysmal navigation and some stunning sights. The courses took place in sweltering heat on very hilly slopes. Everyone enjoyed themselves and we would like to thank Matt Lynas and Claire Hargreaves for organising this very successful tour.

Swimming

Are you one of a handful of the freshers who signed up for the College Swimming Club and haven't given it a try yet? If you are, you are not alone. Over 150 people showed an interest in the Club this year and yet only a fraction have taken a Monday or Friday evening off to come and join in with one of the most social clubs at IC. So far we've had no disappointments.

Those who do have the get-up-and-go to show up for training have a great time and get fit into the bargain. People leave the sessions feeling good.

Not only that, but they also stand a chance of going to the club tour next July...We hope to go to the South of France or perhaps even closer to the equator.

So, if you've passed on the Swimming Club, perhaps now is the time for a rethink. You'll only need to turn up once to find out what you're missing.

See the 'What's On' columns for the next club session

Yachting is back

The Yacht Club is back in operation. Two years ago, after many years of successful operation, the Yacht Club was defrauded out of about £2,000. The man the club found to take them sailing decided to go sailing himself after being paid, and the money was finally recovered after legal action from the Union.

Due to this the club's activities stopped for that year. Most of the activity within the club last year was tied up with preparations for this year. And now we are back with a vengeance.

We have two boats going out on the weekend of the 20th October. One of them is skippered by our resident instructor, who will be able to run courses for us, so the opportunity of getting a Royal Yachting Association (RYA) crew and RYA day skipper certificate, at about two thirds the commerical cost, is here! We also hope to run a week's trip at Easter to get across to France and the Channel Islands—the Page 12

French restaurants and duty free make it a very worthwhile trip. Over the summer we hope to go for two weeks and get as far as Brittany.

For the racing enthusiasts, the Royal Ocean Racing Club season starts in May and we will be looking forward to entering one or two races. Unfortunately the Fastnet is not on this year, but we can start to build up to it.

For those of you who have expressed an interest, or for those of you who haven't, watch out for information on our noticeboard along the walkway by the JCR as we will take membership at any meeting and we should have another boat or two out in three or four weeks time.

It's good to be back and we are hoping for great support—you need no experience to join. See you soon.

Snooker

Congratulations to Abdul Khan, the winner of this year's freshers' tournament. He beat Roger Attril in a thrilling final by 2-0. Anyone who is interested in joining the Snooker Club can come up to the top floor of the Union Building at lunchtime when committee members will be available to register your membership. One year membership costs £4 and there is no additional charges for booking. Finally, any budding champion out there who fancies his chance is invited to enter the November Open; the entry fee is £2 with cash prizes for the finalists and a trophy for the winner. The tournament will begin on Monday 6th November and the deadline for entry is Friday 3rd November.

Of course you won't have time to play games if loans come in

Rugby I

IC 1st XV-62
UCL 1st XV-4
IC kicked-off the new season with impressive wins over our adversaries UCL. What is normally a tough, evenly matched battle, this encounter left UCL wondering, what worth it would be continuing the

Both teams began shakily, but IC moved away with tries by Simon Bicknell and Rich Walters. Confidence growing, the IC lads began throwing the ball about. Further tries were scored by frenchi JF and the physical Henry Faj. Mike Anderson kicked two conversions to put IC twenty points up at half time.

The second half turned out to be a bit of a walkover for IC. UCL managed some respectability on scoring a well worked try. However the IC machine rumbled on, to give more of a cricket score at the final whistle.

Rugby II

IC 2nd XV-39 UCL 2nd XV-0 IC 2nds also proved to be superior in their match. Storming away to a convincing win over UCL.

Notable performances were put in by stand-off Andy Fleming and wing Matt Hales, each scoring three tries. Freshers Tony Bull and Tintin each scored a try. Tintin also dropped a goal and kicked two fine conversions.



X-Country

The first event of the new season saw IC men's team win a bronze medal at the annual Oxford Poly Relay Race. Over 1.78 miles of undulating country, Captain Alex Gaskell once again performed first-leg heroics by coming home in second place (9.14). Second man Bill Skailes, running with flu, turned in 9.35 to hand over fifth. Eric Myrvang brought us up to third with 10.02 and anchorman Dave Knight completed this good team performance by consolidating third position with 9.31.

Now a member of staff, John Rowland DIC was unable to run for the A team, but his time of 9.26 may well have been a veteran's course record.

Our ladies team did not figure amongst the medals, but a good time was had by all, Christy Sinclair running 13.14 and Helen Macintosh 12.34. Helen will soon be heading for Japan to represent UL in the Ediden Relay.

Football winners

IC 1sts -3 Kings College -0 IC unveiled a new generation of stars for their opening match against Kings and the new boys demonstrated a ferocious determination to keep the ULU Premiership where it belongs, in the trophy cabinet at Harlington.

Kings were simply outclassed in every department. Adam Thomas opened the scoring just before half time with a deftly placed shot. A superlative strike from Felix Francis and a scrambled effort from the ever-battling Mike Patton in the second half secured the points, despite the fact that IC had been reduced to ten men by the loss of skipper Pip Peel with a knee injury.

On this form, IC are once again a force to be reckoned with this year.

More footy

IC II— (1)2 KCH I—(0)1
Neil Leonard, daring to go where no man has gone
before, clinched the game for a hard working IC side,
with a goal in each half.

Despite the difficult pitch, which was harder than most of the tackling, IC deservedly came out on top; many players showed useful skills.

Incidentally, KCH scored when D Copeland, who otherwise had an excellent game, punched an incorrectly awarded corner into his own net.



With the Stratoquest balloon developed by ICI, we proved the sky's the limit by achieving a world record altitude of 65,000 feet.

We are constantly showing that there are no limits to what you can achieve if you are the best at what you do.

We are looking for the best graduates to help us to keep breaking records.

So take advantage of the three visits we are making to Imperial College over the next few weeks.

The ICI Roadshow – a chance for an informal chat with people who have recently joined ICI.

Come any time between 12.30pm and 7.00pm on Tuesday 31st October 1989 at the Gloucester Hotel,

Ashburn Suite, Harrington Gardens, SW7 4LH.

The Careers Fair – look out for ICI's stand at the JCR on either 2nd or 3rd November between 9.30am and 4.30pm.

The ICI Interviewing Skills Seminar – a chance to learn about how to create the right impression in an interview. To be held at 5.30pm on 9th November at the Southside Suite Dining Room. Get your ticket now from the Careers Service.



The Delator Column by Paul Shanley Lucky dip justice

The Conservative Party Conference last week was almost as dull as the Labour, SLD, and SDP ones in the weeks before. From what I did see of it-and luckily I missed Her speech-the only orator that didn't threaten to place the listener in a sleep-inducing. trance of Rip Van Winklesque magnitude was Douglas

The Tory Party as a whole, is a body of people I have never held in very deep regard. As individuals, there are some that stick out-if only for Margaret to chop their necks off-but by and large they mostly represent the True Blue ideal. This is an ideal that you either defend staunchly or attack to the death. The one senior minister who has cut through all party barriers recently has been Douglas Hurd, no more so than in his speech to conference at Blackpool.

Up until recently, the picture of the Home Secretary that has sprung to mind has been that of Spitting Image's quivering jelly complete with ice cream cone haircut. Last Wednesday's speech will have left that impression far behind.

Hurd's conference speech was both confident and competent. In it he outlined plans for law and order which members of all peaceful political groups must surely agree with. The minister left the electorate in no doubt that whatever else the government does, the legal process will not be brushed to one side. Blackpool was duly impressed and rewarded Hurd with a standing ovation—a rare privilege for a Home

But does Hurd's address amount to mere rhetoric? Is government policy getting through to the judges? If last week's batch of sentencing is anything to go by, it would appear not.



Amongst the punishments handed out last week was one of such astounding stupidity that it would lead one to suspect that judges rely more on a lucky dip than on the sentencing book they have in front of them. On Wednesday, a man who fired at an 18month old baby from a tower block was found guilty on two charges of causing actual bodily harm and one of possessing a prohibited firearm. The gunman had been released from custody on the morning of the shooting after a nine-month spell for mugging an old woman. On being arrested, he said "I did it for a laugh". The man was freed by an Old Bailey judge.

An overhaul of the legal system is necessary if that is what it will take to ensure that serious offenders are not unleashed onto the community but are put where they belong-behind bars. Until that happens, until judges are educated, the words of the Home Secretary, no matter how commendable they may be, ring hollow.

Manchester United? Eau?

The story so far: Martin meets Michael in a pub. "Can I buy you a drink, Michael?", says Martin. "Can I buy your football team, Martin?", says Michael. "Have you got any money, Michael?", says Martin. "No, Martin", says Michael. "Okay, Michael, you talked me into it. It's yours for £10m", says Martin.

The saga of Manchester United football club came to a conclusion (hopefully) last week when Michael Knighton withdrew his bid to buy the club in return for a non-executive directorship of the board. The whole sorry affair has been an unfortunate one. What started out as a simple contract between two parties has turned into a scandal that has tarred the good name of Manchester United.

Knighton could have taken an easy option. It would have been relatively easy to approach a merchant bank and say "I've got the rights to buy a business for £10m that's really worth closer to £15m. Lend me the money to close the deal and I'll sell the business and pay you a hefty commission". This he did not do. That alone demonstrates either an incredible lack of nous on his part or a deep affiliation to the club.

I think the latter is more likely. If the rumours are

to be believed, Knighton approached numerous businessman including Owen Oyston, Eddie Shah and lan Maxwell (son of Bob), to help him out. This was after his original financiers had pulled the plug on him. It would appear that with this volume of dealing, he had a general desire to retain the club after purchase-not sell it for a fast buck.

The most astounding feature of the whole affair, however, is that Knighton's credentials weren't checked before the deal was reached. It has been strongly hinted by the quality media that his total wealth is less than £10m, let alone having this sum as operating capital. Knighton isn't even registered with Company House.

Most Manchester United fans must now be regretting that Michael Knighton doesn't head the boardroom at Old Trafford. Football has far too many chairmen who run clubs for greed and their own selfinterest. Of course, clubs should be profit-making, but they should also be there to provide a service to the fans. Without their supporters, clubs would not exist. That is a fact that far too many clubs choose to ignore.

"There is nothing wrong with the quality of British tap water. I drink it myself." - Environment Secretary, Chris Patten last month. Seen at the Tory Party conference last week - countless bottles of Malvern Spring water lined up along the front table. This week's quiz: Which minister in particular was seen

Apology

In last week's column, it was inadvertently stated that the Union Administrator, Jen Hardy-Smith is 94. Delator now acknowledges that this statement is completely without foundation. Delator retracts the statement unconditionally and accepts the fact that it was no more than a cheap jibe by a two-bit journalist seeking to get a quick laugh at someone else's expense. Delator wishes to apologise to Mrs Hardy-Smith for any inconvenience this may have caused her. Silly old bag.



Letters

I have received a number of letters on the subject of the Life Sciences Division. Unfortunately, these were handed in too late for inclusion in this week's issue. I shall print them all in next week's issue, whilst refraining from comment now. FELIX welcomes letters. This is your Newspaper; if you wish to vent your opinion in the form of a letter or opinion article, please drop something in to the FELIX Office. The deadline for letters is Tuesday lunchtime, 1.30pm.

Loans again

A lot of people are probably going to complain that I have biased this issue with an anti-loans stance. I fully admit to this with no shame whatsoever. After the pathetic turnout at Tuesday's EGM, I felt that it was important to try and raise people's awareness on this issue. The end-line of the loans issue is that every student in London will be £20 worse off per week, unless they are prepared to take out a hefty overdraft. Already, students at Imperial have overdrafts hanging around their necks; if the situation gets much worse, students will not be able to study in London. If you don't care about this, I have only one question to ask; why did you come here?

If you do care, or you want to know more, please go to the Union Office and find out some details. Contrary to popular, but misinformed, opinion, the Union is not the people in that Office, it is YOU. If there is no opposition to loans from IC Union, it will be your fault this year.

A sad point to note at this stage is the Rector's opinion on the matter. He feels that grants 'wholly paid for by the State are no longer tenable.' I must presume from this that he also means that Imperial College is no longer tenable as a place of study. Professor Ash represents us at the highest levels within the education system, and he is selling us out. This calls for a brief resume of what happened last year, I think.

Last year, IC Union Hon Sec, Ian Morris, presented a paper to the College's Governing Body, which outlined the financial failings of the loans scheme proposals. Governing Body decided to set up a committee to look into the paper further. Professor Ash was appointed as the person in charge of calling this meeting. What a surprise that the paper was never discussed then. How are we supposed to feel when the man at the top refuses to even help in the formulation of an opposition to loans? I'll tell you how I feel; disgusted. At this rate, Imperial College will disappear before Professor Ash has a chance to finish his term in office. Oh well, I guess there will be some mention in the Queen's Honours list one day, after we're all gone. Thanks Eric.

Southside

I have begun to wonder who is in charge of what at Imperial. I am rapidly coming to the conclusion that the only thing that everybody is in charge of is covering their own arse. Peter Hallworth changed his story on the swapping of the Southside locks more times than I care to mention. He ended up by blaming the Southside housekeeper and temporary staff employed during the Summer. This is not good

management. A good manager takes the rough end of the stick and backs up the staff below him. Face it Peter, you were in charge of these locks as Managing Surveyor of Residences and there was an almighty mix up and terrible breakdown in communication. Blaming other staff and then saying that you were very busy during the Summer is not good enough. The Summer holiday should be your slack period if you are actually looking after STUDENT accommodation.

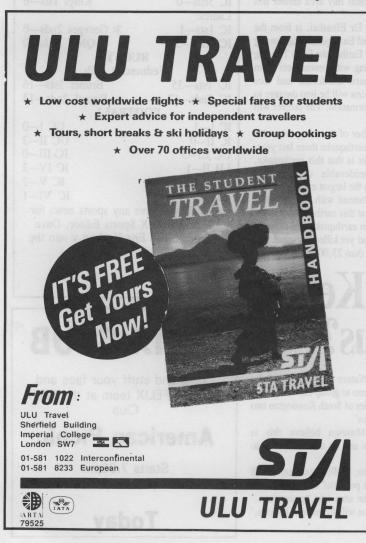
Happy Birthday

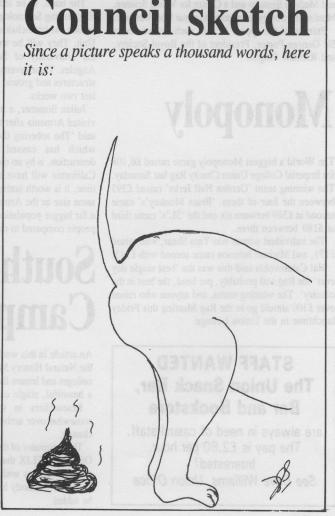
Happy birthday to our music editor, Neil Lavitt for Wednesday. Buy him a drink if you know him and forgot.

Credits

Many thanks to last week's collators including Richard Vaughan, Christy White, Permi, Murray Williamson, Tim Newton Smith, Martha Black, Cathy McClay, Claire Kerry, Niall Davis, Liz Warren, Sydney H-B, Joe Fernley, Ian Frith, Roy Masterton, Jason Lander, Steve Meyfroidt and Rob Gimeno for the telly. A huge thanks this week to Sez and Rhydian for the Cancer feature; Chris Stapleton for the British Museum feature; Paul Shanley; Neil Lavitt, Chris Leahy, Ben Gladwyn and JC Graham for Music; Jason for Science; Jalisi, Wendy and Liz for reviews; Dave Millard, Simon Turner and all the teams for sport; Caveh, Stef and Chris for pics; Pippa, Simon, Ian and Liz for pasting up; Andy Waller for help in recruitment; Andy Bannister for some sanity; Ramin for advertising; Stef for doing the business; Rose and Andy for putting up with me, and the anonymous sources, who shall remain forever so.

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Southside students fobbed off

Dr John Hassard, the warden of Tizard and Selkirk Halls, was unable to get into his own building last Friday, after a mix-up over the installation of new locks in Southside. Students and a security guard were unable to enter when a fire alarm went off, and the fire brigade also had trouble when they were called.

Professor New, Warden of Falmouth Keogh Hall explained that the locks were changed annually and 'all students were issued with a key to fit old and new locks' and that though it 'was potentially a clever system....it didn't work'. He said there had been a lamentable lack of communication between the security officers, Messrs Briley and Reeves and the Manager of Residences, Mr Peter Hallworth, who oversees the maintenance of student residences.

Dr Hassard, warden of Selkirk Hall said it was a

'very regrettable incident' and that he was 'very unhappy about being locked outside at lam,' as was the security guard. He also stated it was 'absolutely outrageous' that nobody could get in when a fire alarm went off, so the fire brigade had to be called to force an entry. He said 'people could have been killed...when I find out who's responsible, I shall be very cross indeed'.

Fiona Nicholas, IC Union Honorary Secretary (Events) who lives in Southside, revealed her consternation about the complete lack of notice to warn students about the lock change. She said she was worried that girls coming home alone late at night could have been trapped outside.

Mr Peter Hallworth told FELIX that the lock change was made last Friday night and that the

temporary housekeeper gave out the wrong keys. He said the code on the locks had been changed but he didn't know why. He went on to say the lock mechanism was damaged as a student had pulled it off. When it was pointed out that some people couldn't use their keys on any doors he said 'I'm baffled...I can't see how the system works'.

The housekeeper involved explained the new keys were given out from a box marked 'new fobs', and that last year's box, also marked 'new fobs' was also used, therefore many of the keys given out were old ones that would not work on the newly coded locks. She said she naturally assumed that the warden and security would have been informed.

New appeal

Imperial College could gain two new research centres and a 150 bed postgraduate hall of residence if a £7 million fund raising appeal is successful. The appeal, which is to be officially lauched on the 24th October, marks the first anniversary of the merger with St. Mary's Hospital Medical School.

The appeal organisers are planning to fund interdisciplinary research at a Centre for Biological and Medical Systems and a Centre for Visual Science. Most of the money is expected to come from business.

Patrons of the appeal include such luminaries as Sir George Porter, President of the Royal Society, and Richard Stilgoe.

Monopoly

The World's biggest Monopoly game raised £6,108 for Imperial College Union Charity Rag last Saturday. The winning team 'Garden Hall Jerks' raised £393 between the four of them. 'Brass Monkey's' came second at £389 between six and the '3L's' came third at £189 between three.

The individual winner was Tara Shear, who raised £171, and Michael Johnson came second with £143.

Hal Calamvokis said this was the 'best single day ever' for Rag and probably, per head, the best in the country'. The winning teams, and anyone who raised over £100 should go to the Rag Meeting this Friday lunchtime in the Union Lounge.

STAFF WANTED The Union Snack Bar, Bar and Bookstore

are always in need of casual staff.
The pay is £2.60 per hour.
Interested?
See Dave Williams, Union Office

Civ Eng go to 'Frisco

The Civil Engineering Department at Imperial College is to send a team of three researchers to California to assist in the investigations into the earthquake which devastated the San Francisco Bay area earlier this week.

The team, to be led by Dr Elnashai, is from the Engineering Seismology and Earthquake Engineering section, which includes the Earthquake Field Training Unit. They will be working with researchers from the University of Southern California and Los Angeles. Their investigations will be into damage to structures and ground deformation. The project will last two weeks.

Julian Bommer, a member of the team, who also visited Armenia after the earthquake there last year, said 'The sobering thought is that this earthquake, which has caused considerable damage and destruction, is by no means the largest earthquake that California will have to contend with. At the same time, it is worth noting that this earthquake was the same size as the Armenian earthquake and affected a far bigger population and yet killed less than 300 people compared to more than 25,000 in Armenia.'

South Ken Campus?

An article in this week's *Nature* shows proposals by the Natural History Museum to group the 'museums, colleges and leisure facilities of South Kensington into a beautiful, single campus'.

Researchers in the Museum believe this is somewhat over ambitious and do not see a need to change.

The originator of the idea, Wally Olin, from Wolff Olin told FELIX that the potential for a social and cultural campus within the area was 'tremendous.' However, 'nobody has the will to make it happen,' he added.

SPORTS RESULTS

HOCKEY Saturday 14th

Ladies:
IC 1sts—1
IC 2nds—0
Wednesday 18th
Guys 1sts—5
Royal Vets 3

IC 1sts—1 St Georges 2nds—0 IC 2nds—3 QMC 2nds—0

RUGBY Wednesday 18th

IC 1sts—35 Brunel 1sts—16
IC 2nds—12 Brunel 2nds—13
FOOTBALL
IC 1—3

IC I—3 UC I—0 UC II—2 UC III—5 IC III—0 LH II—1 IC IV—2 Golds III—5 IC V—2 LSE V—4 IC VI—1

Also: If you have any sports news for the new FELIX Sports Editor, Dave Millard, Chem Eng II, drop it into the Office in Beit Ouad

FELIX CLUB

Come and stuff your face and meet the FELIX team at the FELIX Club

American Picnic

Starts 7.30pm Costs just £1 per head

Today