



22 April 1994

## MANDELA SCHOLARSHIP READY FOR SOUTH AFRICAN CHANGE

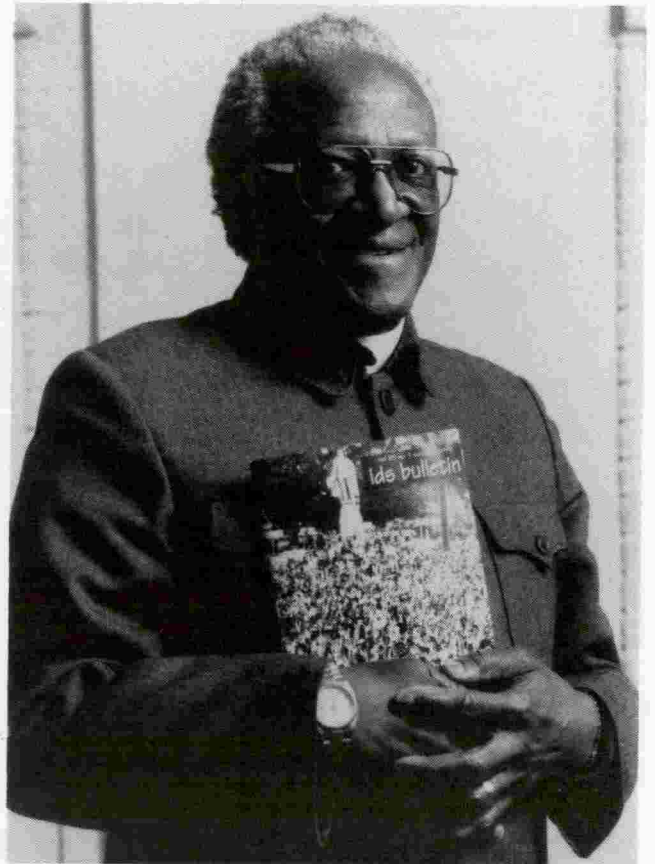
**T**his week South Africa's first free elections should mark a significant turning point in the country's fortunes. Responding to indications from the ANC and the World University Service, The Mandela Scholarship Fund is now shifting its recruitment emphasis towards the post-graduate education of students from Southern Africa.

For nearly twenty years the Mandela Scholarships have widened access to higher education for southern African students, especially those disadvantaged by the economic, social and political conditions of their society. There is now an increasing call for highly trained black people to move into specialist administrative and development posts; postgraduate education, it is hoped, will begin to fill these gaps.

Nelson Mandela has been one of the many African leaders urging the Fund to keep the Scholarships going at Sussex. Professor Willie Lamont, acting chair of the Fund's Trustees explained the continuing need: "Many groups who have previously put funds into educating disadvantaged South Africans in the UK are now intending to put money into education within South Africa. However, there has been little investment in black education in South Africa, and many courses and places don't yet exist. The trust's input will be needed for a long time yet."

The World University Service currently compiles and forwards the Scholarship applications to Sussex, but things haven't always been so straightforward. "In the early days it was a terrible job getting the applications together," says Bernice Ryan, who until last year was managing trustee of the Fund. "Most would-be applicants were in danger and living under cover, and some were in exile. The recruitment had to be done in secret and carried out by intermediaries."

Bernice is continuing her work for the Fund as a part-time administrator in the Student Union, which gives both financial and practical support to the Scholars. The University waives all tuition fees, and there are many individual donors amongst staff and students, but fundraising is still necessary for maintaining the Scholarships. The Student Support Group is a very active body, encouraging students to pledge their caution deposit to the Fund, and organising events like the sponsored hitch to Amsterdam. However, fundraising amongst students is becoming increasingly difficult as they face growing financial and time pressures.



*Archbishop Desmond Tutu recently launched the latest issue of the IDS Bulletin at the House of Commons. 'A Policy Agenda for a post-apartheid South Africa', edited by Raphael Kaplinsky, Fellow of IDS, formed the focus of discussion at a meeting of the All-Party Parliamentary Group on Overseas Development. Archbishop Tutu addressed the meeting, which was attended by many senior parliamentary figures.*

Throughout the University's history its faculty, staff and students have, through education, campaigning and research, played a part in the fight for equal opportunities in South Africa. The Scholarship Fund has always had support from the whole University community, including the current Vice-Chancellor, who has recently become a patron, and Lord Attenborough, the Pro-Chancellor, who has been a highly active patron of the Fund for many years. Before the Scholarships began, Thabo Mbeki, the man tipped to succeed Nelson Mandela in the South African presidency, studied for a Master's degree in economics at Sussex. Now, Willie Lamont believes, the Mandela Scholarship Fund offers a chance for Sussex to continue training the men and women who will shape South Africa's future.

- Covenant forms for the Mandela Scholarship Fund will shortly be circulated to all salaried staff; the trustees hope that you will be able to give generously. Students and staff who wish to make a single donation should forward this to The Mandela Scholarship Fund, Falmer House.

# SOAPBOX

**"We did not opt for a Mathematics Major to write essays!"**

I had announced to my first year audience my intention to set an essay on the social and political implications of PGP (Pretty Good Privacy – a public domain software package for public key encryption and digital signatures). The proposal went down like lead, and this remark was offered, half in jest, as an explanation by a perceptive and articulate spokesman.

Feedback from employers has indicated that mathematics graduates are considered insufficiently articulate, and I felt that a project of this kind might be a further step in the right direction. It is not as if we do not already address this problem. Mathematics students must write an essay and deliver a lecture on it in their second year – this has been a successful and useful tradition for thirty years.

I had expected an enthusiastic response to my suggestion, or at least some discussion of the issues, and of course I was a bit disappointed not to get it. The actual response may reveal attitudes that are causes, or symptoms, of that distasteful spectre, a gap between Arts and Science.

The works of C.P. Snow to the side, there used to be a belief among students – it may still be current – that Arts subjects offer greater freedom of expression, fewer lectures, and a better sex life. Perhaps this belief is a reflection of the more general prejudice in our society against Science, constantly reinforced in press and pocket. Alternatively, it may simply be that we get more questioning students in Arts subjects, because science and mathematics teaching in schools went down the tube decades ago.

Mathematics stands in the unfortunate position of being counted an Arts subject by the accountants, and a Science subject by those on the Arts side. It means so many things, not least to mathematicians themselves, that I hesitate to raise the question of

why students embarking on the subject at university should think it beastly unfair to have essays foisted upon them, just when they thought that all that was behind them. What kind of picture of the subject do they get from school? Just 'sums' and problems, I suspect. Do students see mathematics as an escape from being expected to think or express themselves or have an opinion – a plain road to a steady job in accountancy or management, on which the only difficulties are the acquisition of a few useful techniques? The accountants and managers themselves (the good ones, anyway) are going to give them a shock if they do.

Is it enough (and, if it is possible, it is a great deal) just to teach students technique, and prepare them for employment? Or should we recognise an obligation to educate in a wider sense? In the past we have been reluctant to ask students arriving to do a Science degree, "Do you read books? What do you know about politics? What do you know about music?". Perhaps we have felt it impertinent to probe their general knowledge or level of culture, or their willingness to explore. However, if we are to educate more widely, we shall have to be more forthright, and, dare I say it, less cowardly. There are obvious pressures on universities to abandon this ambition. To oversimplify crudely, there are two camps – the pragmatists ("never mind the airy fairy intellectual bit, pack 'em in and teach them how to use a spreadsheet") and the idealists ("our duty is to teach students how to think for themselves").

I would be very grateful to receive opinions on this matter, whether from students or from the higher panjandrums.

It seems to me that we have had very little leadership on this. This may either be because I have not been listening, or because those who should be providing leadership believe it prudent to keep quiet. Meanwhile, I will strike my colours to the mast. I am an idealist. If you care about such matters, why not let the *Bulletin*, and me, know where you stand?

Gavin Wraith, MAPS

## PHOTOGRAPHIC COMPETITION

*Bulletin* is pleased to announce a photographic competition, open to all staff and students of the University.

The photographs can be colour or black and white prints, and the subject matter can be anything that captures your experience of University life – lectures, research, sporting events, social functions, people, places...

Send all entries to the Information Office by 3 June, and you could win one of our exciting prizes! The list of prizewinners and the winning entries will be published in *Bulletin* before the end of the summer term.

## In the Bookshop

*Recent publications by Sussex authors, all obtainable from Sussex University Bookshop:*

**POEMS FOR ALL PURPOSES.** The selected poems of G.K. CHESTERTON. ed. and introduced by Stephen Medcalf. Pimlico £9.

**THE WILDE CENTURY:** Effeminacy, Oscar Wilde and the Queer Moment by Alan Sinfield. Cassell £10.88.

**THE OUTER REACHES OF LIFE** by John Postgate. CUP £16.95.

**NINETEENTH CENTURY ART** ed. S.F. Eiseman. Contributions from Thomas Crow, Lumacher, Nochlin and Pohl. Thames & Hudson. Paper £19.95, Cloth £35.

**DIMENSIONS OF CREATIVITY** ed. Margaret Boden. MIT £24.95.

**PRIVATISATION & POPULAR CAPITALISM** by Peter Saunders and Colin Harris. OU. £12.99.

### Late Night Opening

*The University Bookshop now stays open every Thursday evening until 7.30 pm*

## THE WANDERING JEW A Leitmotif in German Literature and Politics

Professorial Lecture by  
**Edward Timms**  
Professor of German at Sussex  
Tuesday 26 April at 6.00 pm  
Molecular Sciences  
Lecture Theatre.

All welcome



The Wandering Jew has changed his image over the centuries. Beginning in the seventeenth century as a symbol of piety and repentance, the figure has been given a variety of political disguises throughout history, haunting the imagination of German writers from Goethe to Kafka and Roth, and being manipulated by all shades of political opinion.

Professor Timms, who will address all these aspects of the figure in his lecture, initiated the University's German-Jewish Studies teaching and research programme. He is also central to the establishment of a Centre for German-Jewish Studies, due to open at Sussex in March next year.

## The MOLE

**M**oles do not have a reputation for being avid eaters of fruit, but the publicity that has surrounded the contraceptive effects of Papaya has forced the Mole to consider a change of diet. Readers of the *Bulletin*, and also of the *Lonely Planet* travel guides, will know that women from Sri Lanka, Indonesia, Malaysia, and no doubt elsewhere, give up Papaya when trying to conceive.

But the Mole fears that the sudden publicity that greeted the biochemical analysis of what's at stake may lead to a panic reaction amongst some sectors of the community. Women hoping to conceive may deny themselves a culinary treat when in all likelihood industrial quantities of the fruit would in fact be required to prevent the happy event. Alternatively, women desperate not to conceive may buy up the entire UK stock of Papaya, perhaps as a fail-safe measure in addition to the contraceptive pill.

Of course, too much Papaya, like too much of any fruit, could speed up the digestive system to such an extent that the Papaya-Pill cocktail shoots through the system too quickly for any of their vital chemicals to be absorbed. The moral of the story? Never mix drugs.

So just how much Papaya would do the trick? The last thing we want is a Montego syndrome. For those not in the know, two models of Ford Montego were sold in the US; one with airbags, and one without. Apparently, drivers of the model that was fitted with the airbag were more likely than the others to be involved in an accident. One theory has it that these drivers placed such faith in the car's safety features that they were somewhat more reckless than their bagless colleagues. So faith has its dangers, and it may be unwise to place all one's eggs in the one basket, especially if the basket is full of Papaya and the eggs are, as yet, unfertilized.

But the Mole is, as some may have suspected, a bit of a scientist, and so the appropriate experiment was duly carried out. A modest amount of Papaya (a few slices) was added to the daily diet, and in all other respects, caution was thrown to the wind. The Mole is happy to report that fertility was unimpaired...

And if any linguists out there can explain why it's acceptable to name offspring after flowers, but not fruit (Olive and Cherry excepted), please let the Mole know; after all, "Papaya" has a nice ring to it. A bottle of the usual to anyone who can provide the necessary linguistic enlightenment.

## WHAT THE PAPERS SAY

**I**n an article in *The Guardian* (12 April) Dr Mark Mazower (EURO) asks "What is happening to Greece?" For various reasons, not least the Macedonia issue, "the birthplace of European democracy now finds itself out on the margins, shunned by its European partners." Although Greece has grounds for concern over Macedonian irredentism, Dr Mazower believes it is this very issue which demonstrates Greece's inability to confront one of its greatest taboos – "the question of their ethnic minorities". Dr Mazower argues that Greek political culture, fed on the myths of nationalism and a distorted past, "is highly resistant to notions of multiculturalism and reluctant to protect individual liberties which go against prevailing views of 'Greekness'". Greece, he adds, has nothing to fear and everything to gain from its neighbours but, "That will not happen without a change in self perception."

**D**r Tom Collett (BIOLS) and his colleagues have shed further light into the complex navigational abilities of bees by discovering that bees close in on a hive by using a "map" and a "compass" (*Daily Telegraph* 18 March). When close to a hive, bees store a mental map of the surrounding area. "When they come back they recall this memory and in essence compare what they see with what they have stored and move until the two are exactly the same", says Dr Collett. "When they have done that they know they are back home again". The researchers found that bees use compass cues to orient south, so making it easier for them to recognise landmarks and use them for guidance. When closing in on a hive it was found that bees always faced south during the final approach.

**O**n the eve of last Monday's historic three-way scheduling clash of *Brookside*, *Coronation Street* and *EastEnders*, Andy Medhurst (CCS) investigated the mass appeal and cult status of Britain's most popular television programmes (*Observer* 17 April). He argues that "British soaps consistently operate a quite astonishingly high level of professionalism, sharp wittedness and emotional pull". He claims, "Soaps are easy to ridicule if watched in isolation. To appreciate a soap you have to let it seep into the pattern of your week and eventually the fabric of your life. It's a long term devotional commitment." He adds "British soaps need a clearly defined geographical location and regional identity...and a balance between the everyday and the exceptional. When this works you get *Coronation Street*; when it fails you get *Eldorado*."

## RAIL PARK-AND-RIDE SCHEME

Network SouthCentral have introduced a Park-and-Ride scheme for staff of the University of Sussex travelling to Falmer from the following stations:

<b>BRIGHTON</b>	<b>HOVE</b>	<b>SHOREHAM-BY-SEA</b>
<b>HASSOCKS</b>	<b>LEWES</b>	<b>WORTHING</b>
<b>HAYWARDS HEATH</b>	<b>POLEGATE</b>	

The conditions of the scheme are:

- It is open only to people who are currently full or part-time members of the University's staff who are in possession of a Staff Identity Card (available on request from the Personnel Office).
- Staff purchasing a season ticket valid for one month or more to Falmer at the standard rate from any of the above stations will, on request and on production of their Identity Card, be issued with a free car parking season ticket valid for the same duration. Where the ticket office does not hold a car park ticket for the same period the customer will be issued with one of a longer duration which must be surrendered on expiry of the season ticket.
- Any current season ticket holders that already hold car park passes for the above stations will be given a proportional refund. Any current season ticket holder without car park passes can also take part in this scheme.
- Normal parking conditions otherwise apply to the use of both season tickets and car parks

# RESEARCH in DEVELOPMENT

## FOREIGN AID PACKAGES TIED UP WITH STRINGS

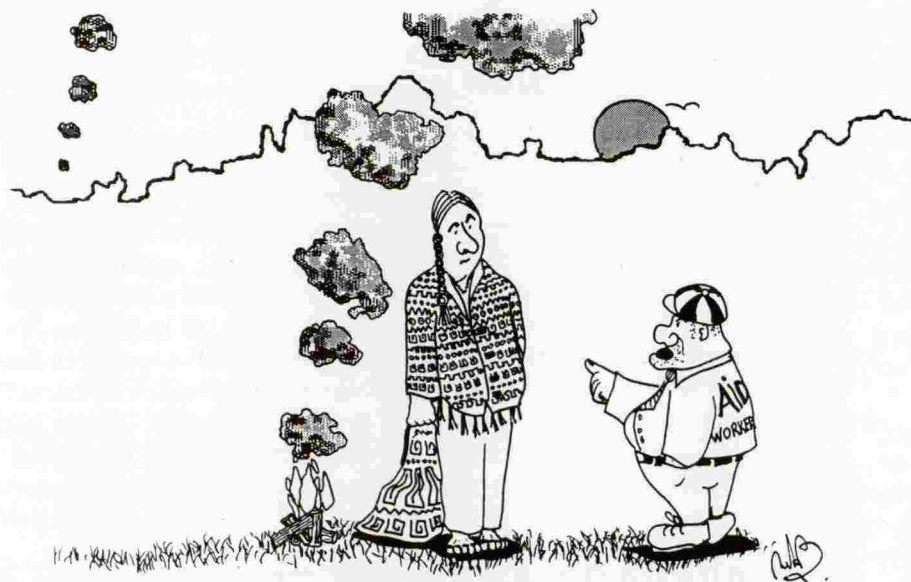
**F**or countries in receipt of foreign assistance, a free lunch is a rare pleasure. Emma Crewe, a social anthropologist in AFRAS, has spent several years working within development agencies observing the relationships that develop between their workers and the recipients of help. Her observations confirm that aid seldom comes without strings attached. Emma immersed herself in the developers' communities, trying to highlight the philosophical problems associated with development work. She found that two

users of the stoves. Unfortunately, providing equal opportunities is one of the few strategies that is described as a western imposition. Many impositions, often more sinister than an equal opportunities policy, pass unnoticed.

Even well-intentioned policies, such as a stipulation that greenhouse gases must be reduced, or that staff must be 'gender aware' in a western manner give Non-Governmental Organisations (NGOs) a colonial air. Such subtle strings can be unhelpful, but are often minor problems when compared with directives

may not suit economically poorer nation, argues Emma. "They don't always have the capital required for massive-scale technology development. They do, on the other hand, have a rich supply of some resources, such as labour. We should build on what is already there, and allow people to develop their own technology in a way that respects human dignity, economic constraints, and the need for environmental stability."

Indigenous knowledge often receives little respect amongst development consultants: their livelihoods often depend on proving that they have something special. They may, when dealing with their clients, drop the names of books which are difficult to acquire in Africa or Asia, employ the latest computer software packages, or use fashionable jargon from the World Bank to prove they're in touch with the latest ideas. "They can dictate what makes a professional person competent," says Emma. "The nationals of that country are forced to compete. Whether this is to make sure they get another job, or because they're simply expected to behave like this, who knows? The result is the same: white immigrants, who probably know the least about the country's needs, can take the most powerful and the most lucrative jobs."



**"How many times have I TOLD YOU! Article 531 requires the use of smokeless fuel!"**

fundamental ideas guide development. "The first assumption we make is that societies can be divided into those that are 'modern' and those in need of development through technology" she says. "The second assumption is that technology is a male business. As it is defined, in terms of hardware and equipment, it cuts out most of the technical skills and techniques that women are involved in."

While working with a programme to manufacture fuel-efficient stoves in Sri Lanka, Emma saw the effects of this way of thinking: the women of these communities were denied equal access to the technological training, despite having the same production skills and being the only

received from Government aid agencies. It is not unknown for the British government to offer money only if it is to be spent on British-made equipment and British consultants.

"National experts will always find it useful to exchange information, if it comes with no strings attached," says Emma. "They do get frustrated, though, not only by the development agencies putting conditions on everything, but also by their own governments who will adjust policies as much as they have to in order to accept money. It's very hard for anyone to refuse gifts."

Capital-rich countries should consider the possibility that their technology

### African Book Appeal

Many universities in sub-Saharan Africa are unable to maintain a subscription to a single academic journal. The International Campus Book Link is appealing to all UK academics who subscribe to research journals to pass on their copies to a university library in Africa.

For further information and selection guidelines contact Book Aid International, Rainfurly Library Service, 39/41 Coldharbour Lane, London SE5 9NR. Tel: 071 733 3577.

## TOO MUCH SALT IN THE RICE?



The yields of rice on salt-affected land is barely one-sixth of that on good land. Up to a half of all irrigated land worldwide is affected by salinity, which can, in extreme cases, render land uncultivable. Professor Tim Flowers of BIOLS (pictured left) is collaborating with the Central Soil Salinity Research Institute at Karnal in India to combat this problem by developing salt-resistant crops. Land going out of production through excess salinity has been a problem throughout history. The collapse of certain civilisations, such as Mesopotamia, has even been blamed partly on salt. In the past, salinity problems have often been overcome by moving to other land, but increasing population pressure means that this is now much more difficult; existing land simply has to produce more crops. Current methods of decreasing salinisation involve multi-billion dollar heavy engineering projects, so developing and enhancing the tolerance of plants to salt would be a very much cheaper long-term solution.

Salinity in plants has been researched at Sussex for 25 years. For this project, a programme of work has been formulated which aims to raise the level of salt-tolerance and produce improved lines of rice, Indian mustard, and chickpea so that they can produce better on marginal lands. Plant breeding is, by its very nature, always a long-term venture. However, when results appear from this research the need will be greater than ever – the population of the earth is far from stable.

- Public Lecture: Tim Flowers is to give his Professorial Lecture entitled, *Will there ever be salt tolerant crops?* on Tuesday 21 June at 6.00 pm.

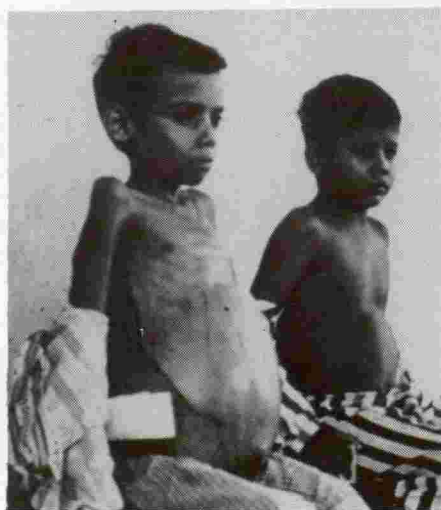
## SNAIL CONTROL IN THE FIGHT AGAINST BILHARZIA

Since the late 1960s Dr Don Thomas of BIOLS has been working with snails. To be more accurate, he has been working against them: these particular snails are the host to a parasite which infects over 250 million people all over the world with bilharzia, a debilitating and sometimes fatal disease.

Once the parasites have entered a human host (usually through human contact with infected water) they develop into adult worms, which live in the blood vessels of the bladder or the bowel. On their way out of the body the spined eggs of these worms can become trapped in the liver or spleen, causing huge swellings. Treatment is available by chemotherapy, but it does not protect against re-infection.

One method of combatting the problem is to stack the environmental odds against the snail. In one example of such an approach Don Thomas collaborated with the World Health Organisation (WHO) and a firm of construction engineers to build a lake in Nigeria which was designed to make life as difficult as possible for the floating plants on which the snails live. The lake, which had a constant water level and a gently shelving shoreline, was designed so that its long axis ran in the

direction of the prevailing wind. The result of this was that both the plants and the snails were unable to establish themselves in the lake.



*The terrible effects of Bilharzia*

Poisoning the snails is a more difficult approach, but one which Don Thomas and his collaborators have tried – with success. The snails will not eat anything which doesn't

attract them and stimulate their appetite; any toxin has to be sweetly disguised in a chemical cocktail. Detailed study led to the identification of some naturally occurring chemicals which act as attractants and appetite stimulants, and these were combined with naturally occurring toxins in micro-capsules. Once eaten, the poison is slowly released, killing the snail.

Tests of these capsules in a simulated natural environment have worked extremely well, and promised a significant advance in the fight against bilharzia. However, as Don Thomas explains, things aren't always so simple: "There is no reason why these micro-capsules could not be produced locally in a cost-effective way, but the pharmaceutical industry is not interested - they can't see a way of making large profits from such a venture in poor developing countries."

The WHO and the pharmaceutical industries are instead investing heavily in vaccine development. What is really needed, according to Don Thomas, is an interdisciplinary approach involving biologists, engineers and medical personnel. In the final analysis, he believes, there can be no solution to the problem without fully involving the indigenous people of the areas where the disease is transmitted.

# ALL IN A DAY'S WORK

*Lorinda Holness is the Residential Services Manager, responsible for overseeing the whole accommodation area. Here she talks to Mike Brooks about her work.*

“My main responsibility is the day-to-day management of the accommodation area – basically to make sure the whole housing team is functioning as it should. I have to make sure that the accommodation is being maintained, that the staff are looking after the students, that the students are happy, and that they are being allocated accommodation. Obviously the last one is our major problem, particularly at the beginning of the academic year when we may have to try to find additional accommodation. We all feel very strongly that our job is not only about housing students, or maintaining the buildings – our job is also about student welfare. The first year students who arrive on campus are, in general, fairly young people, and for many of them it's their first time away from home. Although we have a member of staff whose duties include student welfare, the staff managers (both on and off campus) all have a welfare role to play.

“The feedback from the new



*Lorinda Holness*

campus housing has, on the whole, been very good. The Lewes Court scheme in particular has been very successful with the first year students. Current students have the opportunity to put their names on the waiting list for rehousing; that list contains a very large number of people who are waiting to move into Lewes Court. With regard to the Brighthelm houses, which are made available to self-selecting groups of final year or postgraduate students, we have more applicants than places.

“There were concerns about creating a two-tier system with the new housing. We actually worked very closely with the student housing advisory

group prior to and during the development, so we got quite a lot of feedback on how the students were feeling. I don't really think a 'them and us' situation has arisen at all. As part of the housing strategy we have also been carrying out a programme of refurbishment, including the upgrading of kitchens, bathrooms and furnishings, throughout the rest of the accommodation. Work has been undertaken in the Park Houses, East Slope and Park Village – in PV we have concentrated more on the family flats, but we have also made improvements to other areas. We are currently looking at a design to change the layout of the single student blocks.

“My role is to play a part in getting the programme together, and agreeing what will take priority. Obviously we have to make sure that we've got the finances to do what we have planned, but we also have to make sure we've got the time as well. As you can imagine, we have to do most work during the vacation periods.

“The best part of my job is working with a team of people who are able to react to all sorts of different situations. We do have crises in the accommodation area, and the people here are very good at dealing with them. They can hold things together, and get things done. That gives me a lot of confidence – I know that they are people I can trust.”

## Changing Face of Campus

The following work is being undertaken by the Estates Division. You are asked to take care in the vicinity of the work and to stay outside any safety barriers:

### Works in Progress:

- Biology: New extension. Building works expected to be complete late April.
- Residences: Fire precaution works, continuing 5-year programme.
- Arts A—E, and EDB: Fire precaution works, until late May.

### Planned Future Works in 1994

- EAPS I (South): Major repairs, start end of June (10 weeks)
- MAPS II: Repair main duct to south of building, summer vacation.
- MAPS III: External refurbishment, start end of June (12 weeks).
- Library: Courtyard waterproofing. Summer vacation, dependent on listed building consent.
- Gardner Arts Centre: Refurbishment of heating and ventilation and repairs to parapet walls, start mid July (11 weeks).
- MOLS I: Computing Centre. Disabled access, during summer vacation.

## Student Mentoring

As a development of the Student Tutoring scheme, the Enterprise Unit is launching a pilot student mentoring scheme this term. Student Mentoring involves students acting as mentors for under-achieving fourth year pupils at two local schools, Falmer and Patcham.

The scheme aims to raise the pupils' motivation and achievement at school and to encourage them to continue in further education. Mentoring is jointly run by EHE and COMPACT, an initiative funded by Sussex TEC, to improve opportunities for local pupils. Student mentors will be

given initial training, and on completion of six sessions with pupils will be awarded with a certificate. As well as benefiting local pupils the scheme helps Sussex students develop their communication, organisational and interpersonal skills and gives valuable insight into the field of counselling and education. The training will be on Wednesday 27 April at Falmer School at 2.30 pm.

Members of faculty can also become mentors. For more information about the scheme please contact Tessa Gooderson, Enterprise Unit, Arts D422, tel: 57(8543)

# Chemistry clears the clouds

By Michael Kenward

**H**igh up in the ionosphere the fundamental ingredients of the atmosphere — nitrogen and water — play host to a whole series of chemical reactions. The end result of this chemical chain is to create 'seeds' around which water molecules can condense and clouds can form.

Atmospheric chemists believe that it takes four chemical steps — with different combinations and compounds of hydrogen, nitrogen and oxygen — to create these seeds. They had a pretty good idea about the first three steps in the chain; chemists had managed to reproduce them in laboratory experiments.

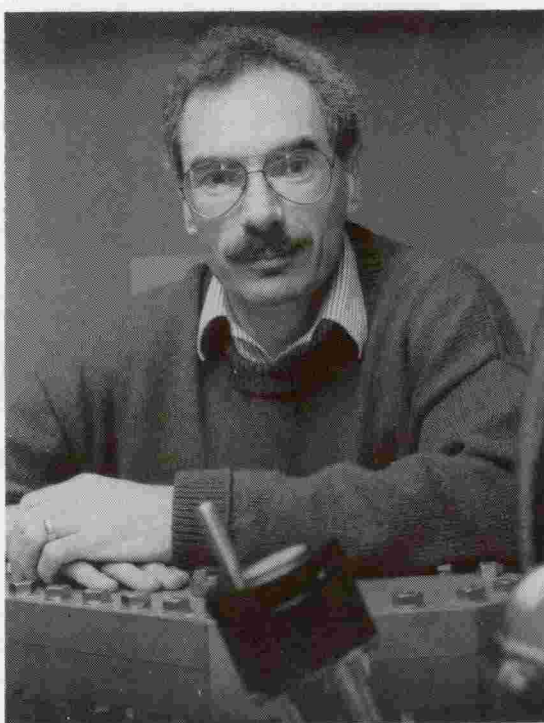
Researchers had ideas on what happened in the final stage, they had seen traces of what is happening in the ionosphere, but no one had been able to reproduce the reactions in a laboratory. Chemists hadn't seen the individual components, the chemical 'species', that would be there if their ideas were correct. This all changed recently when Professor Tony Stace and his team in the School of Molecular Sciences found what could well be the missing link in the sequence of chemical reactions that play an important part in the formation of clouds. "We were actually able to observe that final step," says Stace.

The Sussex team found the evidence for the final step as a part of its research into 'cluster chemistry'. This branch of chemistry sits between looking at what atoms and molecules get up to individually, and studying 'bulk matter'. As Stace explains it: "We know how water molecules behave, and we know how a beaker of water behaves. Cluster chemistry is somewhere in the middle." By looking at how atoms and molecules clump together, chemists can get insights into the physical properties of matter.

Stace and his colleagues work with clusters of thousands of atoms. The cluster chemistry team found the missing species by looking at a jet of water vapour travelling at high speed. The researchers inject a mixture of water and argon into a vacuum. The pencil-shaped beam cooled down as it expanded and then went through a chamber filled with nitric oxide. By using a mass spectrometer to look at what went on, Stace's team found

what it was looking for: evidence of the missing species.

SERC funded Stace's work on ion chemistry in the upper atmosphere as part of its Atmospheric Chemistry Initiative. The programme set out to produce valuable scientific insights into the chemical processes involved in atmospheric pollution, for example, as well as 'cloud chemistry'.



Professor Tony Stace

While he clearly thinks that the team is on the right track, Stace warns that the experiments haven't given the researchers conclusive proof that these really are the reactions that happen in the ionosphere. It may well be that the intermediate components that he has seen in the laboratory are just too short-lived to play a major role in the chemistry of the upper atmosphere.

"The next step is to find out how stable these intermediates are and to see if they last long enough in the upper atmosphere." The Sussex team plans to do this by repeating its earlier experiments and aiming a laser at the region where the reactions happen. If the chemical species are very fragile, the energy of the laser light, standing in for the Sun's own energy, will make them break up. If that happens, atmospheric chemists will have

to look for another mechanism to explain how clouds form.

While Stace is happy to work on problems like cloud formation, he admits that his interest in cluster chemistry is at the academic end of the spectrum. "We are at the pure end of chemistry," he confesses. Such knowledge is essential if the research is to make its way out of the laboratory and into industry. But someone else has to pick up the baton and look at other aspects of cluster chemistry. Unfortunately, says Stace, the UK shows less interest in cluster chemistry than its scientific competitors.

The Sussex team is one of just two 'cluster chemistry' groups in the UK, a state of affairs that Stace finds worrying. Most universities in Germany and the USA have similar teams. "The UK is a long way behind," says Stace.

Interest on cluster chemistry is not limited to academics. Exxon, says Stace, has put a lot of effort into cluster chemistry because it can give the company's chemists insights into how catalysts work.

Cluster chemistry is also an interesting component of the growing interest in 'nanotechnology', the business of making tiny 'machines' and engineering at a scale of millionths of a millimetre. Nanotechnology has aroused considerable interest in recent years.

As Tony Stace points out, work at these dimensions begins with clusters of atoms and molecules. Japan, for example, has put a lot of effort into the applied side of cluster chemistry. Stace quotes the example of electronics companies. These are interested in the role of cluster chemistry in microelectronics, as chips shrink to the dimensions where manufacturing enters the realm of nanotechnology. It may be a long way from the ionosphere to future generations of computers, but it all depends on knowing how chemistry works when atoms and molecules gang up and join clusters.

# What's on...

Monday 25 April – Sunday 1 May

## Lectures, Seminars, Colloquia

### Monday 25 April

12.30pm **Sussex Continuing Education Research Forum: Matching Experience with Credit: Accreditation of Prior Learning (APL) in Continuing Education.** M. Stuart, Arts D310.

4pm **Women's Studies Research Seminar: Domestic Space in Italian Neo-Realist Cinema and American Film Noir.** M. Günsberg, Arts D310.

4.30pm **Neuroscience Seminar Series: The Programmed Dismantling of Muscle in Flies.** J. Miyan (Manchester), Biology Lecture Room.

### Tuesday 26 April

3pm **Sussex European Institute Seminar: Soviet Imperium — Past, Present and Future.** A. Filippov (Moscow), Arts A70.

4pm **COGS Seminar: Representations as Control Substates: Beyond Words and Pictures.** A. Sloman (Birmingham) PB5C11, MAPS III.

4.15pm **Biochemistry and Genetics & Development Seminar: Mitochondrial NADH ubiquinone oxidoreductase (Complex I): Structural Analysis of a Complicated Enzyme Complex.** I. Fearnley (Medical Research Council, Cambridge), Biology Lecture Room.

6pm **Professorial Lecture: The Wandering Jew: A Leitmotif in German Literature and Politics.** Edward Timms, Professor of German, MOLS Lecture Theatre. Open to the public — all welcome.

### Wednesday 27 April

2pm: **Cunliffe Seminar on Constitutionalism and National Identity: Associative Democracy and Constitutional Ordering.** Prof P. Hirst (Birkbeck), Arts D520.

### Thursday 28 April

4.30pm **Experimental Psychology Colloquia: Culture and Mathematics: A Developmental Psychologist's View.** T. Nunes (Institute of Education), Biology Lecture Room.

5pm **Geography Research Seminar: Industrial Change and Regional Development in Slovakia.** A. Smith (EURO postgraduate), Arts D610.

5pm **Social and Political Thought Seminar: The Codification of Sociological Theory.** A. Filippov (Moscow), Arts D310.

### Friday 29 April

2.15pm **SPRU Seminar: Tapping into Overseas Technology and Best Practice.** R. Hinder (Head, International Branch, Innovation Policy Division of Department of Trade and Industry), EDB 121.

4.30pm **Philosophy Society Seminar: Externalism and First-Person Authority.** N. Shardlow (Oxford), Arts A155.

## Language Centre

### Summer Term Opening Hours

Monday — Thursday 0900 - 2000

Friday 0900 - 1700

Saturday 1000 - 1600

### English Language

A range of f/t and p/t EFL courses are available in General English and in English for Academic Writing and Speaking. Details and enrolments from the EFL Secretary, Room A125 ext.2175 or 2003, and the Language Centre ext. 8006.

## Meeting House Events

### George Bell Association Lecture

6pm Friday April 29: *The Life of George Bell.* Frank Field MP for Birkenhead

## University Golf Society

### Golf Society Fixture List

1. versus Piltown, Wed 4 May

2. versus East Brighton, Fri 13 May

3. versus Ham Manor, Fri 20 May

4. versus Dyke, Sat 4 June

5. versus Pyecombe, Tues 14 June

6. Club Championship, Singing Hills, Thur 14 July

Apart from the Dyke, all begin 4pm. If interested in any of these events and have not yet received a circular contact James Hirschfeld on ext. 8080 or 691312 (home) or Email: jwph@sussex.

## Sportcentre Classes and Courses

### Summer Term 1994

**MONDAYS: Weights Induction (11.15-12.15), Aerobics (11.12noon), Step (1-2pm) and Fitness Circuit Training (5-6pm).**

**TUESDAYS: Improvers Squash (11-12pm), Action Walking (1.10-1.50pm), Fitness Room (3-4pm, instructor present), Beginner's Tennis (3-4pm).**

**WEDNESDAYS: Beginners Squash (11-12noon), Body Conditioning (1.10-1.50pm), Fitness Room (2-3pm, women only, instructor present).**

**THURSDAYS: Weights Induction (11.15-12.15), Fitness For Life (11-12 noon), Action Jog (1.10-1.50pm), Beginners Tennis (3-4pm), Fitness/Circuit Training (5-6pm), Step (6-7pm).**

**FRIDAYS: Yoga (various levels, 11-2pm), Step (1-2pm).**

For further details (including fees) of all the above courses please contact the Sportcentre reception on ext. 8228.

## For or Against the Death Penalty?

### 14 Days in May

14 Days in May is a BBC documentary about the last fortnight in the life of death row resident Edward Johnson. Johnson, a young black man, was executed in Mississippi. The Amnesty Society is presenting the video and asks you to come along whatever your views.

6pm, Wed 27 April, Falmer House Room 126.

## CCE Saturday Schools — 7 May

**Archaeological Conservation: An Introduction.** Designed for people with an interest in the care of archaeological finds.

**Directors of Shakespeare.** A look at the various directorial approaches to Shakespeare's plays.

**Writing a Local History.** A look at the hows and wherefores, pitfalls and tips of writing local history.

For all the above, the venue is the University and fees are £15/reduced £10/minimum £4. To book contact Susan Fasquelle (CCE) on ext. 8527.

**Open University Revision School — D 103.** OU tutors cover and revise the main blocks of D 103. Venue: University. For information and a booking form please write to June Walker at CCE

## Small Ads

**HOUSE FOR RENT:** Woodingdean. Sea view and opening on to Downs and Castle Hill Nature Reserve. Garden with Summer House, pond and lawn. All mod cons and everything from cutlery to bedding supplied. Available for postgraduate or staff from June 10. £100 per week. Contact Professor Walter McMahon on 606261 or 303248.

**FLAT OR HOUSE WANTED:** Lecturer (University of Iceland) seeks flat/house in Brighton/surrounding area for self and family from 1 May to 31 July 1994. Contact Dr Chris Evans on 354-1-694575 (day) 354-1-17563 (evening). Email: chris@raunvis.hi.is. Or leave a message for Halla Thorsteinsdottir on 699743. A flat exchange is also possible.

**HOUSE FOR LET:** Family house available for let in July and August. Please contact 505171.

**BRIGHTON SEA FRONT FLAT:** Available for short lets. Suitable for holidays or visiting lecturer. Fully equipped. Minimum 1 month - maximum 3 months. Contact Norma Binnie on ext. 4257.

**TUITION:** English for foreigners (all levels), German (to intermediate level) given by experienced, graduate teacher. £10 per hour. Contact Judith Land on 475786.

**FLAT WANTED:** Couple (p/g student/staff) with 3yrs old child seek flat for 6 months from July/August. Contact Monica on ext. 3510.

**FOR SALE:** (1) Sax for sale. Alto, good condition. £300. (2) Rover 2000 for sale. A reg, low mileage, spacious, good condition. £900. Contact Rupert on 689460 or Email: ruperty@cogs.

## Bulletin

The Bulletin appears on Fridays with copy deadline the preceding Friday. We welcome your suggestions for news, details of events, letters and small ads. Please send contributions to **Pauline O'Reilly (editor), Mike Brooks (features) or Terry O'Donnell (What's On)** at the Information Office, Sussex House, ext. 8209 or Email: Bulletin@sussex.ac.uk.

The Bulletin is produced and published by the Information Office. Campus photography is by the Photographic and Design Unit and printing is by the University's Printing Unit.