EDiT

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2020 Vision

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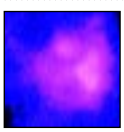

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EDINBURGH
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HOGMANAY

CAPITAL GAINS

With Edinburgh emerging in a recent survey as the number one place to live, offering a quality of life unrivalled in the UK, the question facing the city is how to stay top of the 'feelgood' table. As **Fiona MacLeod** reports, the prospect of devolution

ILLUSTRATION **DIANE LUMLEY**

When is a capital city not a capital city? Answer: When that city is the seat of a nation's power but has none. Edinburgh, the slow-beating heart of a restless nation, has been just such a city for more than 200 years.

With the Union of the Parliaments in 1707, Edinburgh's power departed. The panoply remained; it kept the Kirk, the education system, the courts and legal code, the General Assembly and the Court of Session, but it lost the true sense of itself as a city at the centre of things.

What has happened since is that Edinburgh the city has reinvented and relabelled itself - not, perhaps, as flamboyantly as Glasgow in recent decades, but in a solid, surreptitious way, to become whatever it needed in order to survive. Thanks to its all-form-and-no-content status, Edinburgh's ample architecture has housed a myriad interests. The precipitous city has become Festival city, rising from the post-war gloom; city of Finance, the sleek European centre of money-making; and - no mean city achievement this - Hogmanay city, a must-do holiday destination in the darkest, coldest months of the year. And now, just in time for the new millennium, Edinburgh is poised to be a real capital city once more, a seat of power, complete with House of Parliament and First Minister.

So how will Scotland's capital face up to a new millennium? Well, first it has to get there. At the beginning of the year the city's Lord Provost, Eric Milligan, set up a Commission on Sustainable Development for Edinburgh, to examine how best to improve the city's economic, social, environmental and cultural vitality. A massive public consultation exercise aims to ask individuals and a wide range of organisations what they believe are the major challenges facing the city, and how they would like to see Edinburgh change by 2020.

These are big questions, and much is expected of the answers they hope to get. The Commission's 14 members are from business, academia, non-governmental organisations, trade unions, community groups and local government. They are calling on representatives of all the major groups required to make sustainable development a reality to come before the Commission and be cross-examined on their internal and external policies. So far it's just words. And policies and recommendations have a tendency to stay just that unless they are given some force.

Phil Matthews, secretary to the Commission, admits this, but says: "The Lord Provost's involvement is critical in getting the local community to tackle this subject seriously. The report produced by the Commission at the end of the year will have specific recommendations for action by all key players. We will expect all major agencies in the city to respond publicly to the recommendations made." And if

> Beyond the political promises and referendum rhetoric, the city's future life has altogether more basic needs

Edinburgh can galvanise itself into running a country again, surely it can work out ways to cut back on the exhaust fumes while it's doing so?

The early signs are encouraging. By 2000, Edinburgh could be the site of Europe's first car-free, low-energy use housing development. The 120-home proposal, a mix of privately owned and council tenanted properties, currently has outline planning permission for the old railway goods yard site between Gorgie and Slateford Road. If this is the future, then developer Canmore Housing Association is hoping this project will earn it a market lead. It is a prototype, offering housing that is low on environmental impact, energy use, and maintenance.

John Saunders, responsible for Edinburgh Council's transport planning and economic development, is enthusiastic about the proposal. "The housing scheme is certainly at the cutting edge of European developments in the field of sustainable development", he says. "The car-free aspect has yet to be thrashed out. It might be that tenants and home-owners don't own a car or don't bring a car within two miles of the site. There are plans to link the development into a car sharing scheme as an alternative to car ownership."

So far, so promising. But Edinburgh's future as a pleasant place to live and work can by no means be taken for granted. A parliament will mean more people. More buildings, business, vehicles, more traffic. Less space, less time, more pollution. And stating the obvious doesn't win votes or friends for those who say it insistently enough to get in people's way. The blights of urban living will grow as Edinburgh grows as a real capital city.

To tackle traffic pollution and transport problems, City Councillor David Begg's planned greenways and no-stop red lines will expand. The sustainable Edinburgh could eventually ban privately owned cars from the city centre. The city's first two park and ride sites on the western outskirts of the city at Ingliston and Hermiston will be operational by 2000, running bus links to the city centre. Trams, buses, taxis will have to follow predetermined routes, and cyclists and pedestrians will have the freedom of the city centre's wide streets, untrammelled by choking traffic jams and stop-start pedestrian crossings.

It's happening already. A pilot scheme in Marchmont into car sharing will begin early next year. Residents join by paying an annual subscription, so that when they need to use one of the 12 available cars they can do so. Petrol will be paid for via a

CAPITAL GAINS

continued

smart card. Once again, Edinburgh's scheme is a first in the UK, although similar operations flourish in Europe. "We hope this will be an option for people who decide not to buy a car. It creates a more even playing field between car use and public transport use," enthuses Saunders.

Commission secretary Phil Matthews supports the priority given to transport issues by the City Council: "We want win/win/win solutions to problems. For example, tackling fuel poverty in the city not only creates jobs and improves the health of the disadvantaged, it helps the city reduce its unsustainable levels of CO2 production." Three wins in one go, and we get to run our own country.

Beyond the political promises and referendum rhetoric, however, the city's future life has altogether more basic needs. Roger Talbot, Director of the Edinburgh Sustainable Architecture Unit, is cautious about making any general claims for changes in attitude in the city. "This is a multi-levelled issue. Edinburgh has very special characteristics which make it atypical and particularly challenging and difficult. When you talk about developing a sustainable Edinburgh do you mean the city centre, or Muirhouse and Pilton? There are enormous gulfs, and there is no simple solution. What may well work and apply in the centre and Edinburgh's more favoured villages will not work elsewhere. We need to work for equality and equity within the whole city."

While expressing enormous admiration for individuals such as David Begg, Talbot believes the city's preoccupation with transport is getting in the way of more pressing issues. "There is danger of skewing the whole question of sustainability and resource utilisation. At root these are ecological issues. We must just use less. To get people to make changes in their lifestyle, to bring down their use of energy and resources, you must address social issues. If you don't have social cohesion in society you're going to get nowhere."

It's a view echoed by Simon Jaquet, director of Fast Forward, an Edinburgh-based voluntary organisation working with young people drug and alcohol prevention. For him the city's future lies in getting through to young people, using whatever means possible, giving them jobs, making them feel part of a community that needs them.

For visitors, Edinburgh is a top destination. A world heritage city. For ever and exclusively, postcard-perfect New Town boulevards and Old Town high-rises. And to safeguard the city's future earnings in the biggest global industry of them all - tourism - these have to remain as enticing as tourist boards can make them.

There is a conflict here. You can't set buildings in aspic, but our heritage-worshipping, tourism-fuelled era also forbids us to gut beautiful buildings just because they're no longer ecologically sound. So, for the people who live and work in the millennium's newest, oldest capital city, that means cold, inefficient housing, mean streets and cramped workplaces. It means cautious, neo-something, city centre office developments, and no multi-lane flyovers to ruin the backdrop.

Scotland the brand is a marketing ploy for both the enterprise companies and the tourist boards - it conjures up both silicon glen and the Palace of Holyroodhouse. So as Edinburgh enters the 21st century as the capital of all this, make way for Edinburgh the brand. In marketing terms, it can mean whatever we want it to. A sustainable city, an Athens of the North, at long last a seat of power. A brand name you can trust.

Fiona MacLeod is Education Correspondent of Scotland on Sunday

Sustaining The Environment

The University's new interdisciplinary Centre for the Study of Environmental Change and Sustainability was recently opened by Gerry MacLaughlin, Chair of the Lord Provost's Commission on Sustainable Development.

The Centre was formed as part of the University's response to the urgent need to address our unsustainable use of the environment, pollution of our air, water and soil, loss of biodiversity and ecosystems, and the risks of climate change. The type of research being undertaken by the Centre includes the contribution of tropical forests to the global carbon balance, drilling for indicators of climate change, urban air pollution and health, and contaminated sediments and soils.

A Card For All Seasons

Bank of Scotland and the University have announced plans to launch an innovative 'smart' card next year which, for the first time in Scotland, will combine the needs of students, staff and University on one multi-function card. Specially branded University cards, based on Mondex technology, will be issued to students and staff. They will carry a photograph of the cardholder and will be issued free of charge, regardless of where the bank account is held. It's the intention that in due course all 25,000 students and staff will become cardholders.

Mondex is a unique payment system based on the electronic storage of money using silicon chip-based 'smart' technology. The card will also be used as a matriculation/library card and 'swiping' will permit access to secure areas within the University.

Remembering Carlyle

Professor Ian Campbell and Professor Emeritus Kenneth Fielding of the University's Department of English Literature have jointly produced a new edition of Thomas Carlyle's Reminiscences, a comprehensive compilation of the thoughts and experiences of the famous 19th century essayist and social historian. (see 'Tailpiece' on p.34). Carlyle was born in Ecclefechan in Dumfriesshire. Though he attended the University he never actually graduated from Edinburgh, but went on instead to study German literature, translating Goethe and writing a life of Schiller.

This year also sees the publication of Volume 25 of The Collected Letters of Thomas and Jane Welsh Carlyle in the Duke-Edinburgh edition. The project, which began in the early 1960s as the first-ever complete and critical edition of their massive correspondence (exceeding 11,000 surviving letters), offers a unique insight into the Victorian period. The Carlyles were closely involved with circles literary and political, social and sometimes revolutionary, all of which enrich their letters considerably with detail valuable to any historian of the century. When complete, the edition (which appears at the rate of one fully-edited volume a year) will run to well over 40 volumes. Launched in October and sponsored by the Post Office, Volume 25 covers the year 1850.

Archelogos Logs On

We do things for reasons. We believe things for reasons. Reasons derive from analysis and evaluation, which comprise the epitome of human intellectual achievement, requiring the highest level of understanding, both of the world around us, and of ourselves. Project Archelogos is an attempt to open up a new wealth of possibilities in analysing philosophical thought, and presenting it in ways which will vitalise teaching and research into the foundations of our intellectual heritage.

The project, initiated and developed in the University's Department of Philosophy, uses computer technology to store, organise, and search the philosophical arguments that can be found in the ancient Greek philosophical texts. Currently fifty classical philosophers from America and Europe are preparing book-length analyses of works by Plato and Aristotle for the Archelogos Database.

Honouring Hutton

As its contribution to the bicentenary of the death of James Hutton in 1797, Edinburgh University Library has reprinted the 1785 Abstract of James Hutton's Theory of the Earth, with a revised introduction by Professor Emeritus Gordon Y. Craig. The Library is fortunate in having an original copy of this rare booklet among its Special Collections. The 30-page facsimile (plus a 6-page introduction) is bound in boards covered in a marbled-style paper printed specially for the volume. It is available (price £4.50) from Edinburgh University Library, the Department of Geology and Geophysics, and the Edinburgh Geological Society.

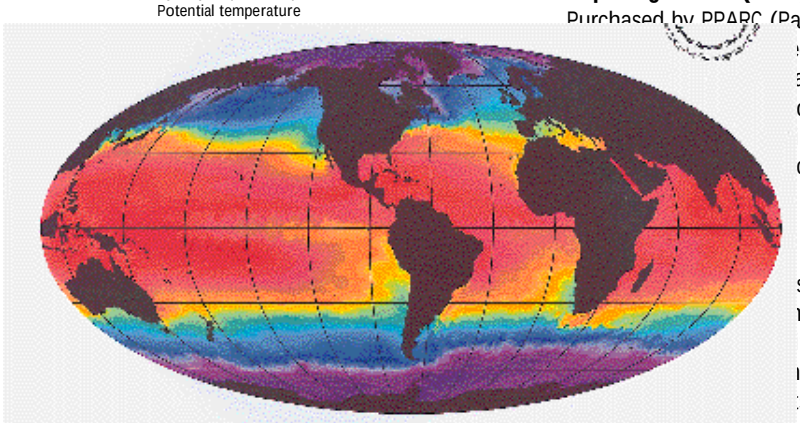
James Hutton was born in Edinburgh in 1726 and studied at the University before continuing his medical studies at Paris and completing them at Leyden, where he graduated MD. After a period of travelling, during which he discovered the fascination of geology as a field of study, he farmed in Berwickshire and toured the Highlands before returning to a life of research in Edinburgh in 1768.

The Principal of the University, Sir Stewart Sutherland, recently unveiled a plaque to James Hutton on the site of his house and garden just off Holyrood Road. The City of Edinburgh Council has given the land on which the memorial stands to the University who will undertake its long term care.

Simulating Nature

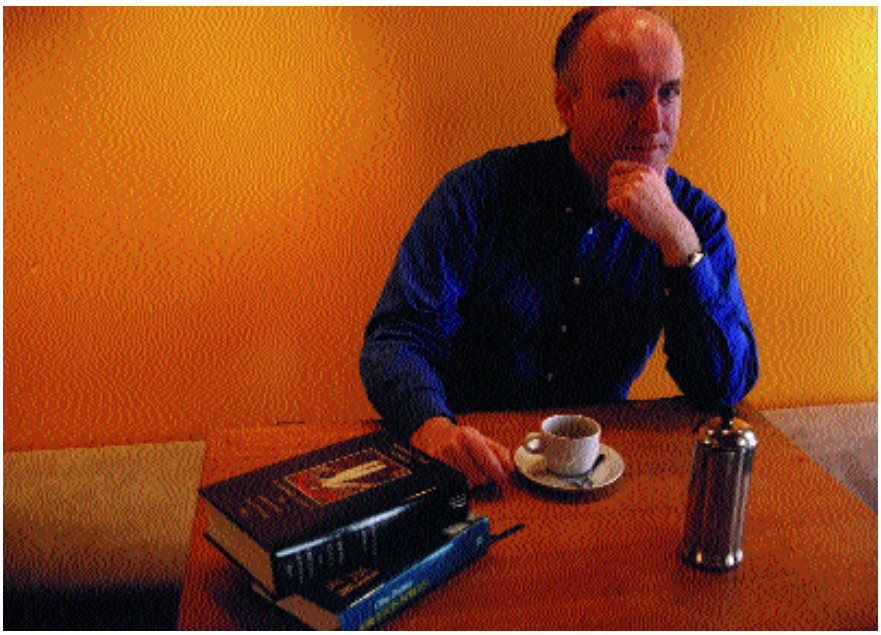
How did the Universe start and how will it end? How can we design better substances to remove toxins from waste? What will our climate be like in 50 years time? These are key questions facing science today, and although we already have many of the pieces needed to contruct the answers, we have lacked a tool powerful enough to put them together. The 256-processor CRAY T3E-900 from Silicon Graphics, launched in September at the University's Edinburgh Parallel Computing Centre (EPCC), is such a tool.

Ocean Circulation and Climate Advanced Modelling Project (OCCAM): Potential temperature



Purchased by PPARC (Particle Physics and Astronomy Research Council), ering and Physical Sciences Research Council) and atural Environment Research Council) for £3.5 on, the CRAY T3E-900 - which can perform 216 llion calculations per second - is the most powerful computer ever used for scientific research in the UK.

EPCC will support scientists using the CRAY T3E-900 to tackle some of today's most complex scientific problems - the so-called "Grand allenges". These problems are beyond the range of tional scientific methods and can only be ed by creating a computer simulation of Nature, s can then study in detail.



Portraying Excellence

Tricia Malley and Ross Gillespie of the University's photography unit at Visual Resources are producing a series of portraits of university staff, entitled 'Portraits of Excellence'. The project, which will provide a historical record at the close of the century of a small number of the University's distinguished scholars, continues Edinburgh's long-standing tradition of commissioning portraits of academic staff.

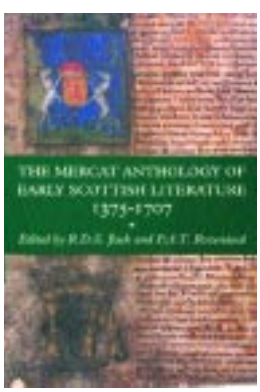
Professor Colin Bell, Vice-Principal, explains, "It will be a new collection within a tradition dating from the 18th century, and will reflect the excellence of the university's staff in the creation and dissemination of knowledge. The photographs will portray not only the individuals but also the university as highly-rated, ground-breaking players within the field of higher education." The portraits will be published in a volume, and go on display at the Scottish National Portrait Gallery in Edinburgh from 5 December 1997 to 1 February 1998, The Portrait Gallery are also to retain a complete set of all the images for their archive.

Merger News

After wide-ranging consultation both internally and externally, the University and Moray House Institute of Education have agreed to submit to the Secretary of State for Scotland proposals for a full integration of MHIE into the University to take effect from 1 August 1998. The proposal has attracted widespread support among staff and students at both institutions and has been unanimously endorsed by the University Court and the Board of Governors of MHIE.

The proposals will involve the creation of a new, ninth University Faculty - that of Education - and will involve the whole of MHIE. There will be a four-year transitional period from the implementation, after which the new Faculty will become part of one of the University's Faculty Groups, most probably that currently covering Law & Social Sciences.

If the necessary agreement and backing is forthcoming from the Secretary of State for Scotland and the Scottish Higher Education Funding Council, the University will become the largest in Scotland and one of the largest in the UK with almost 20,000 full-time students.



Linguistic and Literary Legacy

Authoritative works on Scottish language and literature have recently been produced by staff of the University. The Edinburgh History of the Scots Language, edited by Professor Charles Jones of the University's Department of English Language,and published by Edinburgh University Press, is the first ever attempt to write a comprehensive history of the development and evolution of the English language in Scotland from the earliest times to the present day. It discusses the language's syntax, morphology, phonology, sociolinguistics and vocabulary, and looks at the relationships and interconnections between the Scots language and Gaelic, as well as the manifestations of the Scots language in Ulster, the USA and Australia.

The Mercat Press in Edinburgh have also just published The Mercat Anthology of Early Scottish Literature 1375-1707, edited by Professor Ronnie Jack of the Department of English Literature and P.A.T. Rozendaal. Designed essentially as a teaching text, in just over 500 pages it covers poetry, prose and drama in three chronological sections: Early Scots, Middle Scots and Late Middle and Anglo-Scots. A substantial Appendix presents texts in Latin, Scots, English and Gaelic from the 17th century to demonstrate the vitality and interaction of these voices within the Scottish tradition.

No.4

Win A Break in Edinburgh

This issue, 'Omniana' takes on a competitive edge.

Edinburgh & Lothians Tourist Board are offering a two night break for two people at the city's Albany Hotel, a classical townhouse in the heart of Edinburgh. The accommodation, on a bed & breakfast basis, comes Four Crown Scottish Tourist Board recommended.
The break, which also includes travel from any part of the United Kingdom, is on offer until the end of April 1998 (subject to availability). Entry to the competition is restricted to those resident in the UK.

Answers on a postcard please to:

'Edit' Competition
Edinburgh & Lothians Tourist Board
Admail 643
The Royal Mile
Edinburgh EH1 0AQ

Closing date: Friday 14 November 1997
For a free short breaks brochure telephone: 0990 56 12 53

Q: This is a detail from a University building. Which one, and who designed it?

in association with EDINBURGH & LOTHIANS TOURIST BOARD

2020 VISION

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v i s i o n

The Dearing and Garrick reports are to be the basis of the biggest shake-up of higher education in the UK for over 30 years. The Principal of the University, Professor Sir Stewart Sutherland, is relishing the prospect of change.

BY DOUGLAS FRASER

IS THE UNIVERSITY of Edinburgh too big? As the institution with the widest range of research activities of any in Britain, should it cut back and specialise more? If it is to be reinforced as one of Britain's main research centres, what does that mean for teaching students? And is it time for the most radical reform of degree courses since last century?

Such are the questions being asked at the top levels of administration in Old College, as University chiefs continue to digest the huge poundage of paper, words and analysis in the Dearing and Garrick Reports. Published in late July, the two government-commissioned studies (former Post Office chairman Sir Ron Dearing's committee looking at the UK, Weir Group chief executive Sir Ron Garrick looking in parallel at Scotland) are already having a profound effect on higher education throughout Britain, and that can only accelerate.

"Dearing includes one huge and very symbolic change that has been about to happen for eight or nine years," says Sir Stewart Sutherland, Vice-Chancellor and Principal of the University of Edinburgh. "Higher education will no longer be free at the point of delivery to people born in this country."

The news media agreed in its coverage of Dearing and Garrick, proclaiming this the end of an era. Sir Ron Dearing's committee proposed a £1,000 flat fee - covering about quarter of the cost of the average course - which would plug half the £2 billion gap it calculated between what British universities have annually and what they need. The new government responded within hours, to say they would instead scrap the student maintenance grant, and introduce means-tested fees from next year - nothing for those with parents earning less than £16,000 (currently 40 per cent of Scottish students), ranging up to £1,000 for those with parental income above £32,000 (22 per cent of Scottish students). Loans are to be available, repayable over 20 years and only for those who pass an earnings threshold.

Sir Stewart points out that part-time students, many post-graduates and some undergraduates already pay fees, and

"Young folks today live with a degree of uncertainty which my generation would have found very difficult"

reluctantly accepts their extension on the condition that ability to pay does not replace ability to benefit as the basis for entering university. His main concern is about the manner in which the government ignored Dearing's carefully-constructed fees plan, and about the end of grants. "The government plan has considerable dangers and students are already alert to this," he comments. "One of the points of balance in the Dearing recommendations is that for those students in most financial need, there would remain a cash sum each year which they could count on as they worked through a degree. They've removed what was an automatic, means-tested, cash-in-hand support from those most likely to need it economically and psychologically - those coming from backgrounds that are non-standard and non-traditional."

The questions of 'who pays?', 'how much?' and 'what about the rest of the £2 billion gap?' will remain the focus of attention as universities and students face up to some harsh realities in the post-Dearing era - Scottish universities, for instance, face the daunting prospect of a 5.5 per cent cutback in their state funding for next academic year. But Sir Stewart says it would be unfair to leave Dearing and Garrick at that. There is much more in the 93 recommendations, including: a new form of Scottish degree course, more focus on quality teaching and quality assurance, continued rapid expansion of student numbers (at least in England, as Scotland is already close to the targeted 50 per cent of school leavers), more attention to key skills and work placements in degree courses, the likely continuing impact on higher education of the information technology revolution, a desktop computer for all students within three years and a personal laptop five years later, and even the replacement of degree classifications.

Sir Stewart hopes for two broad outcomes: one that universities, which have almost all been through unprecedented growth in the past nine years, have a clear idea of what their role should be in the new era of diverse, mass higher education; the other that universities will move away from a funding regime which requires them to compete, towards a system where they are encouraged to collaborate. "There could be a significant culture change that relates to

> "The league in which we bat is the big league....and it's in Scotland's interests and in the interests of Scotland's potential students that they have places in which world class research can be done."

the main point the report addresses - that is, diversity within the system," says Sir Stewart. "If we accept that the system is diverse, that there are now many institutions not all of which should be expected to be doing the same things, then you have the basis for collaboration."

It is clear from what the Principal says that he sees diversity placing Edinburgh among the top echelons of research institutions - a road it has already started on with notable success. "Increasingly, research will be funded in fewer institutions in large volume," he says. "You can't have high quality research in every department in every university. The system has expanded so that that is just not on. The question is how you provide for research in Scotland in a way that leaves world class research alive and developing, ensuring the best researchers in the country have access to equipment, to back-up, to teams, to the intellectual stimulus of working with colleagues. There are very few single researchers in many areas we're involved in: they are in teams."

By taking the competition for funds out of the system, says Sir Stewart, Britain could establish centres of excellence in which universities would collaborate, and Edinburgh is well-placed to emerge comfortably inside the top ten centres of British excellence. "The league in which we bat is the big league," he states. "And it's in Scotland's interests and in the interests of Scotland's potential students that they have places in which world class research can be done.

"It is inevitable that if Britain is going to have those that will be mentioned in the same breath as the great universities of Europe and America, there are going to have to be a few in which large research activity is concentrated. The trick is to ensure that that doesn't allow another sort of gentle decline because complacency sets in."

However, Sir Stewart feels Dearing's proposals on research are one of his weaker sections. From Edinburgh's point of view, the move towards concentrating resources in a few centres could be achieved rather faster than the report indicates. The Principal would like to see major reforms to the four-yearly exercise for assessing research quality - the basis on which funds are increasingly allocated. Research requires longer-term horizons, he argues, in which an institution can plan on investing in buildings and equipment and in which research staff have more employment security.

"There has to be a greater prospect of saying 'these are the major research facilities, that's where they're going to be, the University of X will run them for a whole range of institutions, much as the National Library does for Scotland.' That would require a different system from saying 'how many researchers have you got in your department of Y?' and parcel money out that way."

If Edinburgh is to be such a research centre, it raises the question of what happens to the departments which do not score the four or five grades at the top of the research scale. Sir Stewart says those staff whose departments are not assessed as producing high quality research "might find everything moving around them and that they were missing the boat. About 85 per cent of staff are in departments rated four or five. Our aim is for other departments to approach that as appropriate, but there aren't that many other departments."

Does that suggest that Edinburgh University may be thinking of contracting slightly? Having entered for 54 areas of research in the most recent Research Assessment Exercise - the most of any British institution - the Principal says there is active consideration within the administration as to whether the University is spread too wide. "It's a fair question to ask: should we be in all 54 areas and can you maintain the level if you are?" he says. "I think the answers to that might have to be radical."

Research then, seems to be the key to Edinburgh University's future. So what does that mean for students? Sir Stewart reckons success in research will have spin-off benefits for teaching, and give students access to the finest brains and equipment in their field of specialism. Dearing recommended that academic staff be trained and qualified in teaching, reinforcing a trend many universities, including Edinburgh, had already begun.

The biggest change for students might be a new type of degree throughout Scotland. The Garrick report has recommended that a bachelor's degree replace the ordinary degree, taking three years, covering a spread of skills and subject areas, and reversing the trend over the past 30 years towards a high concentration of four-year honours degrees. Only 30 per cent of students in Scotland do ordinary degrees. The Edinburgh Vice-Chancellor is a keen enthusiast for the reform, moving away from any assumption that those without honours degrees are also-rans.

"The Scottish so-called ordinary degree was designed to have the core skills of the day - a science, a language, philosophy and a concentration in one area. With those core skills, people went off and ran Britain and the Empire. The question we should be asking ourselves in Edinburgh is: what would be the equivalent package today for the needs of the next century? It won't be as simple as it was at the end of the 19th century when the ordinary package was designed."

So what might a bachelor's degree at Edinburgh include? It looks too early to say, though Sir Stewart talks of tailoring it to Edinburgh's strengths and capitalising on capital assets, including the city's financial, legal and government communities. However, there is no doubt that universities with high quality research will continue to be major proviiders of specialist honours degrees.

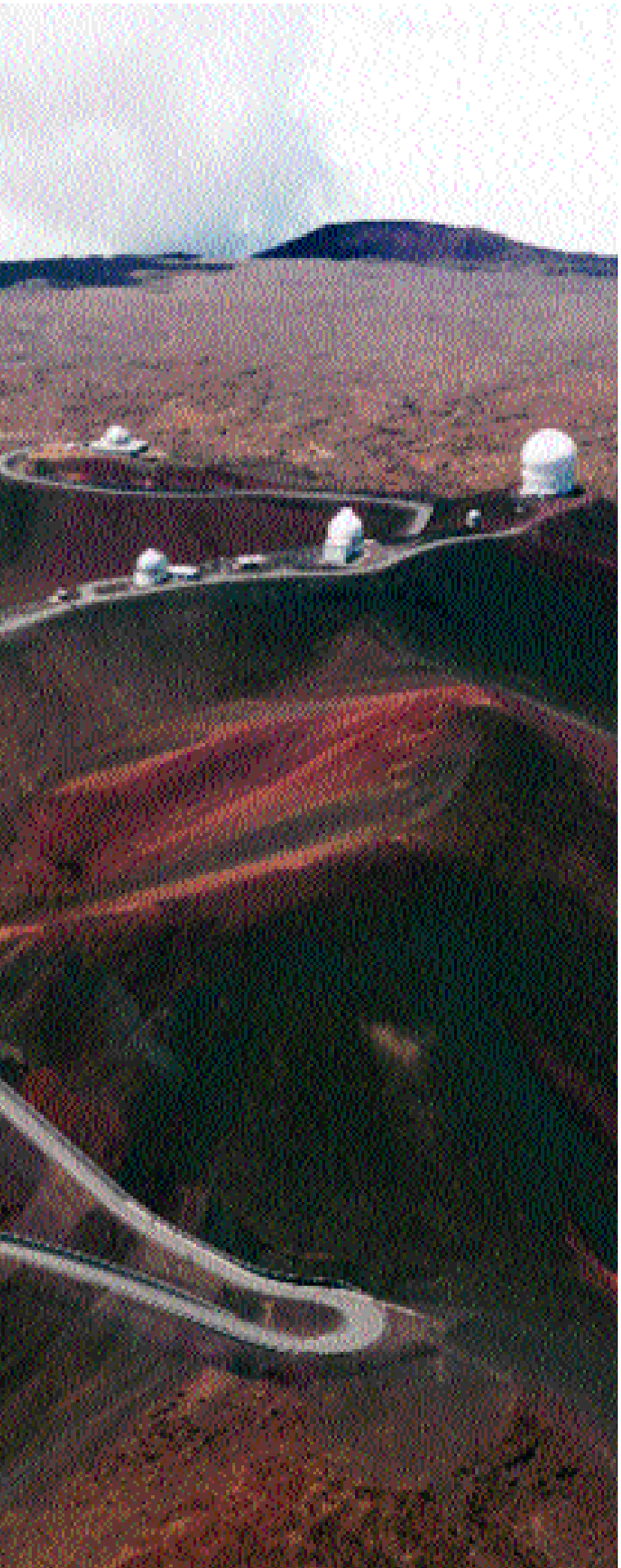
Twenty to thirty years from now, the Dearing and Garrick reports may come to be seen as having a significance as great as Robbins in the sixties university building boom - depending on how much more than fees the government is willing to implement. Sir Stewart says that one thing experience in higher education has taught him is the resilience and adaptability of students to cope with such change. "Young folks today live with a degree of uncertainty which my generation would have found very difficult," he says. "There is a degree of flexibility they have that will set the pattern for the future, so any prediction we make now in the face of current experience is probably going to be wrong."

He is, however, willing to be drawn to some extent. "Edinburgh students in 30 years time will still be very bright. They will be pretty self-confident because they will have had to be to survive. They'll have a range of skills we can't dream of because that's the way technology is moving. Some more will be based at home, they will have debts, and they will persuade employers who want to employ them to pay off those debts quite significantly".

"I'm immensely hopeful," he concludes. "One of the delights of being in Edinburgh is that it has a great past, but it also has a great future. It will be different - but that doesn't give me concern."

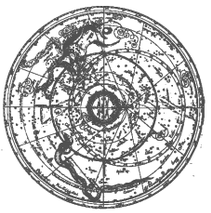
Douglas Fraser is a freelance journalist

THE ATOM'S COME A LONG WAY



PHOTOGRAPHS COURTESY OF THE ROYAL OBSERVATORY, BLACKFORD HILL, EDINBURGH

A University astronomer skywatching in Hawaii has glimpsed the universe being built and found it started very early indeed. Damian Carrington visits the primeval construction site.



THERE IS NO VIEW LIKE IT. Soaring in a huge blue sky, the peak of Mauna Kea casts its giant shadow on to the billowing clouds below. Its twin, Mauna Loa, looms in the distance. Their red lava landscapes look more like Mars than Earth. Beyond, a new volcano is growing from the restless, fiery eruptions on Kilauea.

But the people who live and work in this alien place have their eyes fixed firmly on another unique view. At 14,000 feet and the highest point in Hawaii, Mauna Kea is a like an outstretched neck providing these astronomers with an unrivalled panorama of the heavens.

At midnight, Dr Rob Ivison clambers into his jeep and climbs the last 5,000 feet from the base camp to the summit, ready for another night's observing. The last half mile of the dusty, twisting track is negotiated

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1. 16th century illustration of Tycho Brahe's observatory in Denmark 2. Aurora Borealis observed at Augsburg in 1604 3. SCUBA in the labs at the Royal Observatory, Edinburgh

without headlights to avoid blinding the wide-eyed telescopes.

Ivison, a Research Fellow in the Institute for Astronomy at the University of Edinburgh, has a tough task. By peering hard into the night sky, he is trying to discern the very earliest galaxies in our universe. Fortunately, he has help and can scan the sky with a new instrument regarded by many as the most exciting development since the Hubble telescope.

With this he has captured the glow of the very first stars. These created the atoms which in today's universe form stars, planets and people. For the first time, astronomers can be sure that the building blocks of everything from comets to coal were available from very near the start of the universe. The availability of the raw material and such an enormous tract of time means a planet exactly like our own could have formed, evolved and died, before our Earth was even born. Life systems twice as old as the Earth's could exist somewhere in the galaxy.

Probing the distant history of the universe is only possible thanks to its unimaginably vast size. Crossing the universe is such a gargantuan journey that, despite leaving their galactic source over 10 billion years ago, the microwaves Ivison captures are only just penetrating the Earth's atmosphere now. As microwaves move literally at the speed of light, about a billion kilometres per hour, their odyssey has been inconceivably long.

Ivison believes that his observations have caught one of the universe's first galaxies in the act of forming. But before even the first galaxy could form, astronomers believe that the Big Bang had laced the primitive universe with primordial hydrogen. This provided the fuel for the very first generation of giant stars. Like their rock and roll counterparts, these first superstars burnt briefly and bright. They blazed in an astronomical blink of the eye, lasting as little as ten thousand years.

The temperature inside these cosmic infernos fired up to over 15 million degrees, as nuclear fusion welded atom to atom. It was in these immense furnaces that the elements of the universe were built up, step by step through the periodic table. The single proton of each hydrogen atom was forced to join another, unleashing the power of an H-bomb, over and over. Hydrogen thus became helium, which became carbon, then oxygen and all the elements up to iron, which has 26 protons in its nucleus.

Here the giant engines stalled, as gravity overpowered the nuclear energy which was

For the first time, astronomers can be sure that the building blocks of everything from comets to coal were available from very near the start of the universe

driving the fireball outwards. The burning mass was dragged inwards and the collapse stoked the temperature higher still. New heavier elements such as lead and uranium were created until, like a nuclear reactor, the star went critical and exploded in a tumultuous supernova.

These colossal cosmic fireworks blasted out dusty particles of the newly-forged atoms to mingle with the remaining Big-Bang hydrogen. This mixture of supernova smoke and unused star fuel could then coalesce within the gigantic structures we know as galaxies, forming smaller, slower-burning stars and, eventually, planets. Starlight reflected off this enormous pall of dusty supernova smoke is what has now eventually found its way into the James Clerk Maxwell Telescope in Hawaii. The first galaxy to be caught in its sights is known only as 8C1435+635.

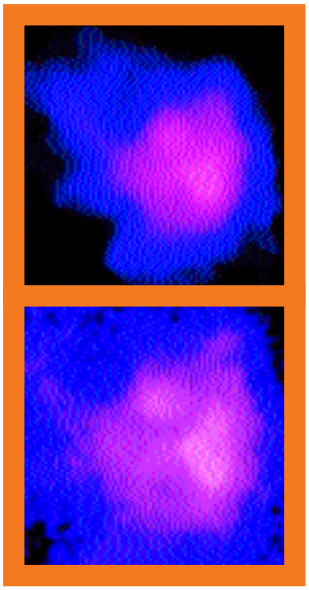
"We may well be seeing this early galaxy at just the time when its first generation of stars are busily eating into the available hydrogen," explains Ivison. "But we are getting mixed signals. On one hand, the billions of tonnes of dust we see tell us that an awful lot of star formation is yet to occur. On the other hand, our more direct measurements of the galaxy's gas content tell us that the stars must already have consumed a good proportion of the available gas."

"It is most likely that we are actually seeing this galaxy as it forms," argues Ivison. "It is undoubtedly one of the best candidates for a truly primeval galaxy."

The faint microwave traces of these titanic events can be picked up thanks to SCUBA, the Sub-millimetre Common User Bolometer Array. Costing over £1m in hardware alone, it is one of the most complex astronomical instruments ever built by the UK. It was designed and constructed in Edinburgh, and having been installed into its Hawaiian eyrie, it took its first serious look at the skies this summer.

The instrument is deceptively understandable. The bolometers are simply sensitive thermometers which measure the rise in temperature caused by the incoming microwaves. A microwave oven warms your dinner in the same way. But the temperatures being measured are those of deep

PHOTOGRAPHS COURTESY OF THE ROYAL OBSERVATORY, BLACKFORD HILL, EDINBURGH



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4&5. maps of a region within the Milky Way, taken with the new SCUBA bolometer camera 6. early record of our solar system 7. the James Clerk Maxwell Telescope, Mauna Kea; a 15 metre telescope designed for observation of the wavelength range between infrared and radio waves. It is operated from the Royal Observatory, Edinburgh.

space, so the bolometers have to be cooled to a mere tenth of a degree above absolute zero, a cool -273 C. And then there are the other 130 bolometers to link into the array.

United with the telescope, SCUBA can measure previously undreamed of differences in temperature and does it several warp factors faster than its predecessor. The primeval galaxy Ivison focused SCUBA on was one of the faint smudges in the sky known as a radio galaxy. These are among the largest of all known galaxies, dwarfing our own Milky Way.

A radio galaxy was chosen because, unlike the other objects in the distant early universe, astronomers are confident they can identify what radio galaxies have become. The number of radio galaxies detected in the early universe accurately matches the number of massive elliptical galaxies seen in the universe now, strongly suggesting that the two are closely related.

"Whereas the early radio galaxy we have observed had plenty of gas left, we know the elliptical galaxies in our corner of the universe have virtually none," notes Ivison. "It appears that that all gas in these galaxies formed stars almost instantaneously in the early universe. We want to know at just what point in time that was."

To find out, Ivison and his colleagues have exploited a trick of light known as redshift. The same phenomenon occurs with sound when an ambulance screams by. The pitch of the siren dips lower after it has passed because the wavelength of the sound wave appears longer as the ambulance speeds away. With light, astronomers measure its wavelength to calculate how fast a celestial object is moving away from us.

In the most widely accepted model of the universe, the faster a galaxy is moving away from us, the more distant it is and the older the signals received on Earth are. The rays from the earliest galaxies are therefore most redshifted and those from the closest, most mature galaxies are least redshifted. By looking at the huge range of redshifts already identified for radio galaxies, the astronomers will be able to monitor them as they are born and as they grow into the galaxies of today.

Although radio galaxies are only one type of galaxy, they appear to trace the evolution of star formation in the universe as a whole. They can therefore reveal how the universe grew from a cloud of Big-Bang hydrogen into billions of galaxies, each with countless solar systems and planets.

The fundamental breakthrough made by Ivison and his colleagues was to accurately weigh the dust in the first, embryonic galaxies. "The fact that we have found billions of tonnes of dust in a galaxy seen as it was 10 billion years ago shows that the components from which planets and people are made existed an awful long time ago," says Ivison.

Despite leaving their galactic source over 10 billion years ago, the microwaves captured are only just penetrating the Earth's atmosphere now

So, like builders on Earth, the universe started its construction work very early indeed. With virtually the whole age of the universe in which to produce planets with the right conditions for life, the existence of extra-terrestrial beings, somewhere, sometime, seems more probable than ever.

A solar system as old as our own could have formed before ours had even begun to twinkle. Even more thrilling is the possibility of life systems existing that are 10 billion years old, that is that have evolved for over twice the length of time that the Earth has.

"There has been a long, long time for places like the Earth to develop," Ivison speculates. "Not just the 4 billion years that our solar system has been around, but maybe double or triple that period."

But these huge leaps in understanding our galactic history are only the first steps for the new instrument. The astronomers are confident that SCUBA will revolutionise our understanding of how galaxies form and evolve. Current rumours trickling down from the mountain top promise the imminent announcement of a discovery for which the astronomical community has been waiting for years.

In Primo Levi's The Periodic Table, the transcendent stories of his life as a chemist during the Holocaust, the book ends with the mythic journey of an atom of carbon starting from an ancient limestone in one of the Earth's early oceans. The atom travels through clouds, water, animals and plants, and finally to the very last full stop of his book.

The pre-history of that atom, before the Earth was formed, was until now untold. But Ivison's tale from the Big Bang, to stars, to galaxies, to suns and planets, completes the chronicle of the atoms which make up everything around us, even indeed this particular full stop, here.

Damian Carrington, who graduated PhD from the University of Edinburgh in 1994, is a freelance journalist.

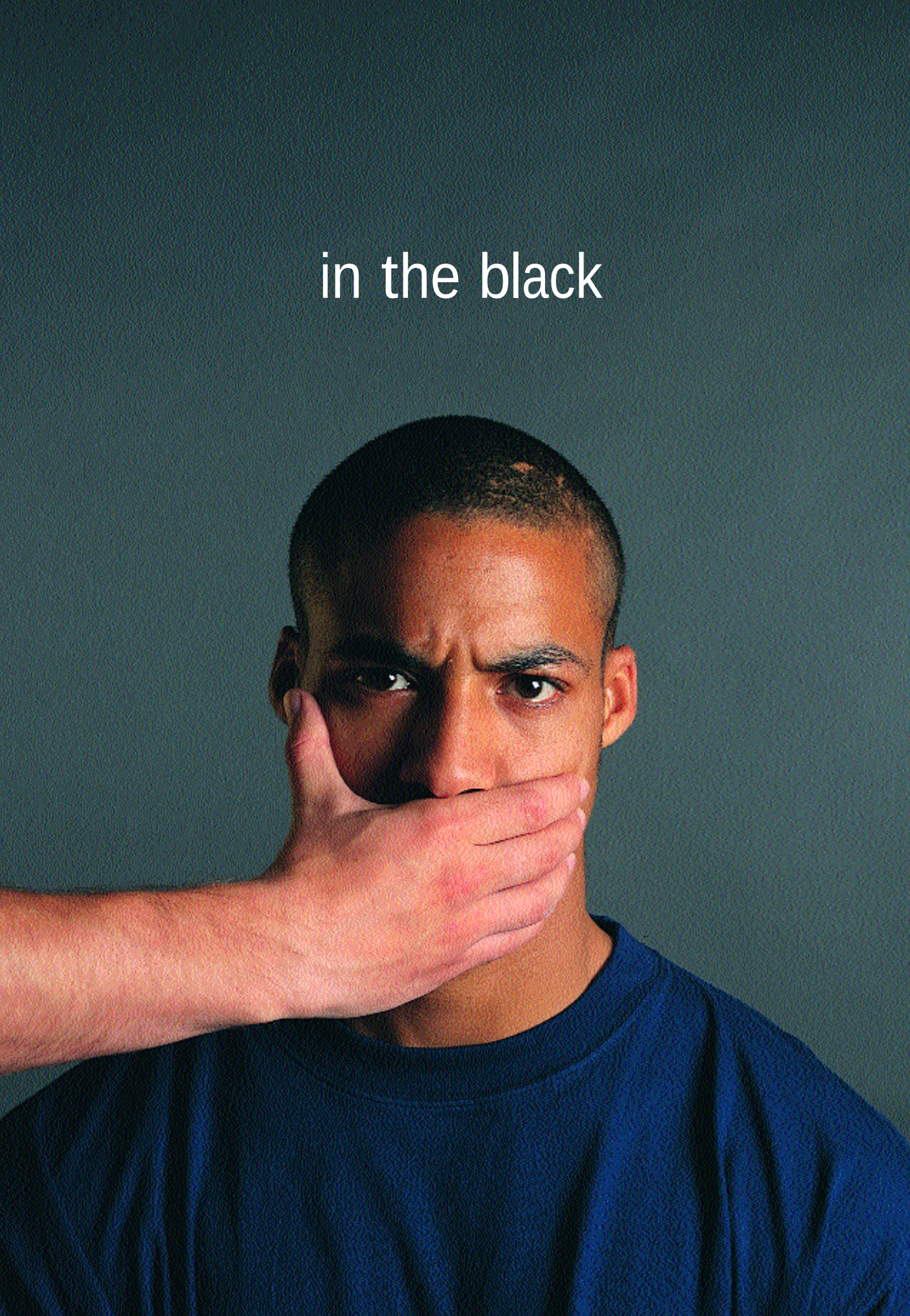
Afore Ye Go

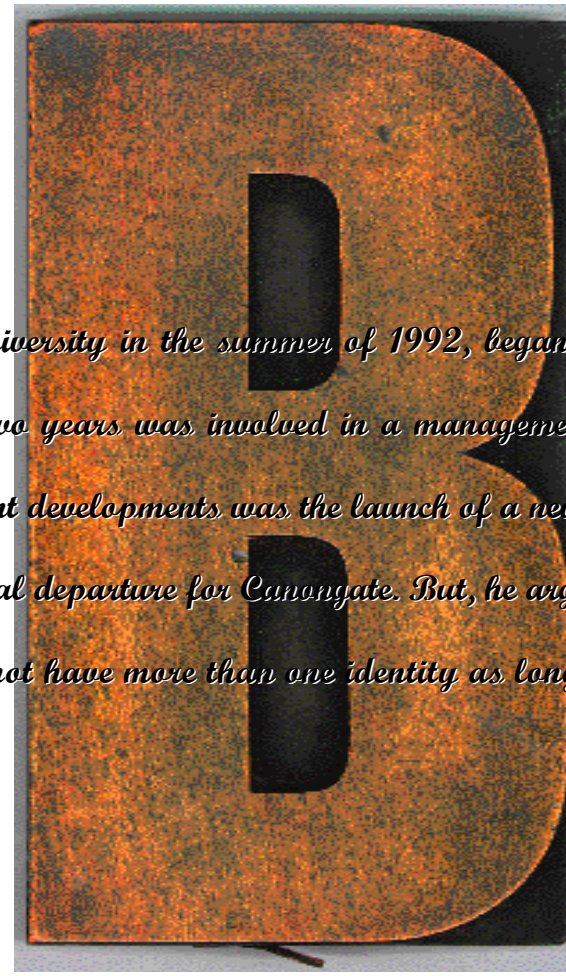
photographs by
Tricia Malley & Ross Gillespie

At eight graduation ceremonies spread over five days last July, 3,307 students graduated from the University of Edinburgh. Like thousands before them, they did so in the McEwan Hall which celebrates its own 'rite of passage' on 3 December 1997 when it is exactly 100 years old.

As with any smooth-running event, the secret lies in careful preparation, for the most part unseen. Every year, behind the scenes, University officials make sure each graduand is attired in the correct robe, placed in the correct seat and, finally, receives the correct degree certificate. Moments of graduation have been captured by proud relatives and friends on tens of thousands of photographs. Here are less familiar scenes from less familiar angles, before and after the big event.

in the black





Jamie Byng left the University in the summer of 1992, began working at the publishers Canongate and within two years was involved in a management buyout of the company. One of the first significant developments was the launch of a new imprint - Payback Press, in many respects a radical departure for Canongate. But, he argues, there is no reason why a publishing house cannot have more than one identity as long as they remain separate.

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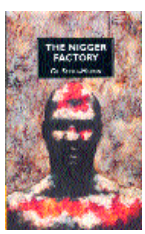
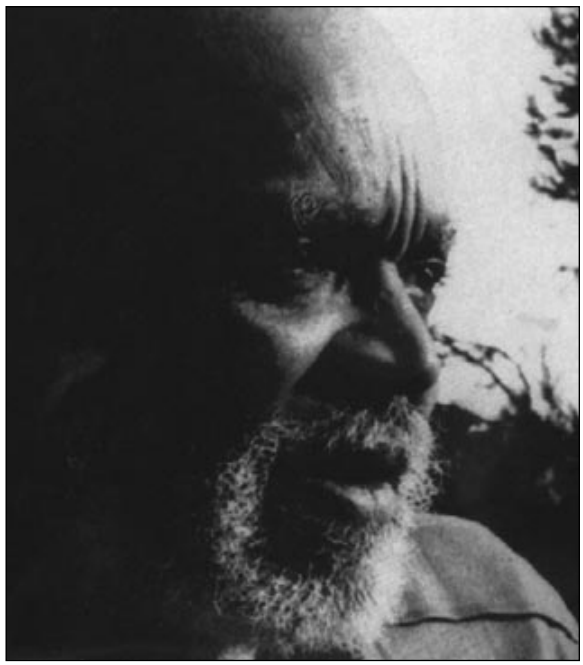


PAYBACK WAS started as a response to what I felt was a major gap in the British publishing scene. While studying for my degree at University, I came to realise that a number of important books on black culture were not available in this country. Although I managed to track down most of the books I needed to read, over time I became increasingly conscious of the fact that these books ought to be in print in Britain, and that there was an audience for such knowledge. As Langston Hughes wrote about LeRoi Jones' Blues People, one of the first three books to be published at Payback, "this book is a must for all who would better comprehend America's most popular music, Negro in origin - blues based - but now belonging to everyone".

This quote distils some of my feelings about the need and importance of setting up a list that was focused solely on black culture and black writing. Blues People is a must if you want to try and understand the evolution of 20th century popular music. Part-historical, part-sociological, part-musical, it was the first book by a black American writer to examine the black experience in white America and the music that developed from it. Although it first appeared in 1963 and in some respects is dated, it remains a book of tremendous significance and insight.

One of my courses at Edinburgh had been in 20th Century American Literature and whilst this provided me with the opportunity to read and study a number of important black American writers (Ralph Ellison, Richard Wright, Toni Morrison, Zora Neale Hurston, James Baldwin) Payback was more inspired by

The payback that James Brown sang about was a self-instigated taking back of cultural independence



music that I was discovering simultaneously. The more I listened and learned from jazz, blues, funk, reggae, hip hop and soul records, the more I began to appreciate that the full story of our popular culture was not being told or rather not being listened to. Acknowledgement of black culture's increasingly pervasive influence on all our culture this century has not been made as clearly as it needs to be and this is a debt that I wanted to make explicit in my choice of the name for the imprint.

The Payback is the title of a monster double album recorded by James Brown and his JB's in 1973. It features cuts that used to cause meltdown on the dance-floor of the club that my wife and I ran between 1991 and 1994 - Chocolate City. The payback that James Brown sang about was a self-instigated taking back of cultural independence, a reaction to the unsatisfactory material payback that never was made following the emancipation of the slaves in the second half of the 19th century. According to Brown, history proved that you can't wait for justice in this world, particularly not if you are black and disenfranchised. He called for action, stating the need to make your own payback as otherwise it ain't going to happen. This whole attitude echoed my own concerns that vital parts of our collective culture were not being recognised. Cultural debts need to be repaid by acknowledging and bringing to the fore the originators rather than the imitators.

Who was the King of Swing? According to our cultural custodians, Benny Goodman, although his hugely successful band of the late twenties and thirties was simply imitating and diluting the work of musicians such as Louis Armstrong, King Oliver and Hot Lips Page. The history of appropriation of black music this century is an ubiquitous one. It was Elvis who was dubbed the King although again others had paved the way before him (Little Richard and Chuck Berry and Louis Jordan to name but three) only to receive belated and minimal recognition for their ground-breaking achievements. Even Elvis himself admitted the fact very early in his career - "The colored folk been singing it and playing it just the way I'm doing now, man, for more years than I know. Nobody paid it no mind till I goosed it up" (1957).

Likewise The Beatles and The Rolling Stones popularised R&B rhythms, often sanitising them in the process, and presented them to a white audience in a way that was palatable. The same goes for disco, cool jazz and all contemporary dance music. Throughout the 20th century thousands of talented black artists have had their work marginalized, overlooked and their contributions to our culture ignored for commercial and essentially racist reasons. To me this was not acceptable. And documenting this invisible history was something that I felt Payback should be about.

WHILE MUSIC was initially the area in which this marginalization to me seemed most transparent, over time I began to realise that a vast range of important and ground-breaking black writers were being similarly missed and forgotten, particularly in Britain. Why this was so seemed to be due to a host of different reasons, not least of which was plain ignorance. In the spring of 1996 we launched the fiction side of the Payback imprint and with gratifying success have brought out new editions (and in many instances the first ever UK editions) of some brilliant novels. Chester Himes, Iceberg Slim, Clarence Cooper Jr and Gil Scott-Heron

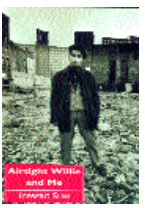
are just four of the writers we published in 1996 whose work was previously unavailable and which has been both critically acclaimed and commercially successful.

Chester Himes gave a lecture in 1948 called 'The Dilemma of the Black Writer in America'. He left America for good shortly afterwards and moved to France where his work was immediately recognised for its originality and power, but the following passage from this speech, I think, is extremely revealing about why some of the writers failed to receive the acclaim they deserved:

"From a strictly commercial point of view, most publishers consider honest novels by Black writers on Black's experiences bad ventures. If there is nothing to alleviate the bitter truth, no glossing over the harsh facts, no compromising on the vital issues, most publishers feel that the book will not sell. And the average publisher today will not publish a book he thinks will not sell."

It's coming up to fifty years since Himes delivered this speech and many things have changed since then, but Himes highlights some of the problems that have regularly faced writers of colour who have written honest novels. Often such books are deeply critical of the bigoted society from which they have emerged and present life in graphic and bleak ways that are not palatable to the predominantly white mainstream. But the bitter truth should not be ignored even if it is hard to swallow and the validity of all the writers I publish at Payback lies in the fact that they are not afraid to speak their minds and to do so in provocative and original ways.

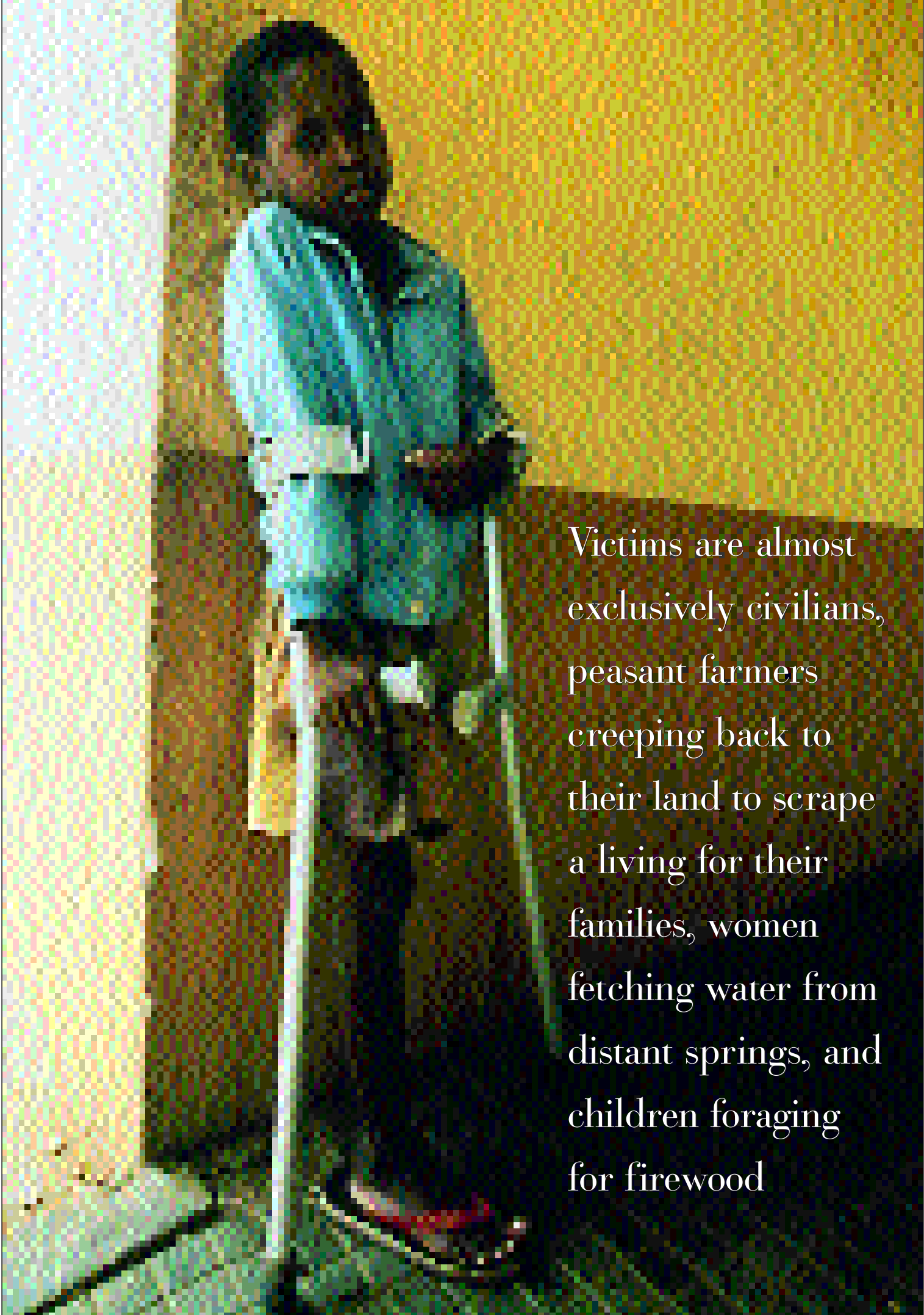
Iceberg Slim is a classic case in point. He was a notorious pimp in Southside Chicago during the forties and fifties who decided to 'go straight' and become a writer after his third stretch in jail. His first book was published in 1967 and was simply entitled Pimp, The Story of My Life. Written in street slang and jive, it offered an uncut glimpse into the black underworld unlike any that had ever been put into print and it remains a blistering assault of the literary senses. Slim went on to write six more books but until last year he had never been published outside of America. I still find it hard to believe that a writer of such power and with such a unique voice could have been ignored for so long.



THE PAYBACK LIST now contains over thirty books and this autumn sees a particularly diverse array of new titles. Included is the first ever biography of the renegade and cosmic jazz composer Sun Ra, the autobiography of Chuck D (the outspoken and fiercely articulate lead rapper from Public Enemy), a major anthology of modern African writing, further fiction by Himes and Slim, a ground-breaking collection of contemporary black British poets and a wonderful Jamaican novel. Extracts from all of the above are featured in our free biannual Payback samplers. If you want to get a taste of where Payback is coming from, why not check one out? As Ralph Ellison wrote at the end of his masterpiece Invisible Man: "Who knows but that, on the lower frequencies, I speak for you?"

Jamie Byng, Joint Managing Director, Canongate Books, graduated MA from the University of Edinburgh in 1992.

For a free Payback autumn sampler, contact Payback Press at 14 High Street, Edinburgh EH1 1TE, tel 0131 557 5111 email info@canongate.co.uk. Alternatively you can visit their website: http://www.canongate.co.uk.



Victims are almost exclusively civilians, peasant farmers creeping back to their land to scrape a living for their families, women fetching water from distant springs, and children foraging for firewood

THE LANDMINES *Legacy*

Jenny Booth examines the issues and a possible weapon in the war against landmines.

The carpet of flowers laid out in front of Kensington Palace in September made Pat Banks very sad, but not just because of the death of a beautiful Princess. Mrs Banks, a landmines clearance expert from Edinburgh, said the money could have been spent on the charity which was closest to the heart of Diana, Princess of Wales, in the days before she died.

Diana's last public duty was her visit to Bosnia to comfort landmine victims, and to campaign for an end to the senseless slaughter and maiming of civilians. The trip had already produced some success, persuading America to endorse the Princess's campaign for a ban. Within a week of her return, President Clinton announced that the US was interested in supporting a Canadian initiative to ban anti-personnel mines by December. "I think it was the images of Diana meeting child victims that pushed them over the edge," said Jerry White, co-founder of Landmine Survivors Network, the charity that flew the Princess to former Yugoslavia. "Her symbolic visit to Bosnia showed that Clinton was just sitting on the fence on this issue. The timing was perfect, August is a dead month in Washington and she forced their hand."

Sadly, nothing is quite that simple in the complex world of international politics. America was keen to join - but only if it could continue to lay landmines to protect the border with Communist North Korea. Clinton also wanted exemptions allowing American troops to use both 'smart' mines, which disarm themselves automatically, and the ordinary $3 variety, in combat zones if they were attacked. What is the point of banning landmines until the military wants to use them? argued the other countries at the talks. After 24 hours of tense diplomacy, America did not sign. Nor were Russia or China, two of the world's biggest landmine producers and exporters, among the 100 nations who signed up.

So the treaty that will duly be signed in December will indeed enforce a total ban. Unfortunately, rather less than half the world will be signed up to it, and herein lies the danger for all the landmine victims past and future whom Diana was trying to help. Many in the mine-clearing industry fear that the public interest in landmines which Diana woke up will turn over and go back to sleep again, now that she is dead and something appears to have been done.

The sombre truth is that a limited landmine ban will have even less effect on protecting innocent civilians from mines, than the British government's ban on handguns will have on protecting innocent passers-by from drugs enforcers. There are too many mines already out there, in the soil of former war zones, killing 25 people a day and wounding 40 more on US estimates. Victims are almost exclusively civilians, peasant farmers creeping back to their land to scrape a living for their families, women fetching water from distant springs, and children foraging for firewood.

If Diana's wishes are to be carried out a massive clearance effort is needed, but that takes money - the kind of money that can buy a million bouquets. "It has grieved me seeing all that money in flowers," said Mrs Banks, days before she returned to Bosnia. "The death has highlighted the mines issue, and it is very much in Diana's spirit to use the opportunity to press for change, but I fear that the attention will wane if people aren't reminded."

But there is a bright patch in the sky, she says - the work of Professor Stephen Salter, an inventor at the University of Edinburgh, in developing a low budget device for clearing landmines. Mrs Banks and Professor Salter met last year after she was shown an article in The Scotsman about his extraordinary prototype, the Dervish. Cash is still lacking to pay for field trials in Bosnia this winter, but the Dervish has already done well in Scottish experiments. Professor Salter and his team hope that it will provide an answer to at least some of the more insuperable problems that face mine clearers like Mrs Banks and her husband Eddie, who was head of the United Nations mines clearance programme in Angola until the political situation worsened.

The Banks now run their own de-mining company, working with whatever international funding is available. Modern clearance methods are painfully slow. Sniffer dogs are used sometimes to map where the mines are, and mines can be detonated in situ rather than digging them up, although this tends to sow metal fragments in the earth. In sensitive spots, like cemeteries or houses, the mines have to be pinpointed and then dug up by hand. This is still the most common technique of de-mining, but is so slow that it takes a day to clear four square metres.

There are too many mines already out there, killing 25 people a day and wounding 40 more on US estimates

Most of the technology for speeding up the process was designed by the military, and has drawbacks for civilian work. During the Second World War the British army fitted giant flails to the fronts of tanks, and charged through minefields threshing the ground and exploding the mines in the tank's path, to clear a track

PHOTOGRAPHS COURTESY OF **THE INTERNATIONAL COMMITTEE OF THE RED CROSS**

Mines move, earth moves, mines swim in wet and sandy soil. The fact is, the figures are meaningless

broad enough for a column of men to mount an attack. This, and other devices like it, was dubbed one of 'Churchill's funnies'. But such devices are cumbersome, no good on wooded terrain, and are extremely destructive of the fragile African topsoil that farmers depend on for their livelihoods. "This kind of mines clearance machine costs £150,000 to £200,000, and operating costs are too high," said Mrs Banks, sitting in Professor Salter's research laboratory, where she had come for one of her regular progress checks on the Dervish.

The concept behind the Dervish is easily understood - a hallmark of the work of Professor Salter, an engineer with a track record of developing simple solutions to complex problems. His ideas to harness wavepower through 'ducks' strung across bays and turned by the tide, was put into use in Scandinavia, but received little acclaim in his home country. He aims to invent a mine-clearer that will cost less than US $3,000, and be capable of operation and repair by local people in the country where the solution is most badly needed. Most importantly, its clearance rate is up to four square metres a minute, a day's work for a hand-prodder - and the Dervish works 24 hour shifts.

Now on its third prototype, the Dervish is a simple tetrahedron of scaffolding poles, with an axle and a toothed wheel, made from very tough Swedish Hardox 400 steel, at each corner. From the apex is suspended a 250 cc motorcycle engine in a protective case, to drive the wheels. When set in motion, the Dervish spins round, like its namesake, and slowly traverses the ground so as to cover every millimetre with a pattern of overlapping circles.

"We are trying to roll over a mine with a weight that is heavier than a person's foot, so that the mine will function. The Dervish will take little damage as it is an open structure with all members lying oblique to the shock fronts," explained Professor Salter. He and Edinburgh University electrical engineer Jimmy Dripps are now working on a high frequency version of the Decca Navigator system which can command the Dervish's movements to a precision of a few millimetres from a control point hundreds of metres away.

In field trials at Otterburn, tests with an anti-tank mine charge showed that most of the structure could survive quite severe explosions, because its streamlined shape presents little profile to the blast. Funding has come from a wide range of public and private sources, notably the City of Edinburgh Council, and in a swords-to-ploughshares touch the explosives firm Dell has lent its expertise. The Dervish is likely to be most effective on flat farmland free of rocks, where it can spin unimpeded. This sort of terrain is receiving little attention from mine clearers at the moment, as governments prefer to concentrate on towns and business zones to get the economy going again.

But bigger hurdles than rocks lie in the Dervish's way. The main fear at the moment is that the UN will rule the Dervish out unless it can be proved to clear 99.6 per cent of mines, the current humanitarian standard for a UN mines clearance certificate. The trouble is, the figure is both unproveable and unachievable. "Mines move, earth moves, mines swim in wet and sandy soil. The fact is, the figures are meaningless," said Mrs Banks. "You should see the devastation in the clearance contingents when an accident happens because something has been missed - but something will always be missed. All the clearance methods have failings. You just need a combination of enough techniques sufficiently different so they fail in different ways."

The greatest danger is public apathy. Diana is gone, and the world still faces a crisis of so many landmines it seems impossible ever to clear them all. In the circumstances, Mrs Banks fears people will become discouraged and shut their eyes. Yet ironically, the job is not quite so big as they fear. The figures, 8 million mines in Bosnia, 18 million in Angola, and so on, were only ever guesstimates and are now being proved wrong. In fact there are only likely to be about 2 million mines in Angola, and half a million in Bosnia - still bad, but achievable.

"At the moment we have surveyed and quantified 60 per cent of the minefields in Bosnia, and by 30 June there were 227,000 mines," said Mrs Banks. "Yet everyone continues to use the inflated figures, all for their own reasons. Those of us in the clearance community think it's going to have a backlash. At the same time, so much more could be done with the money we are spending on clearing mines in old-fashioned, ineffective ways. We could save many lives and speed our work by training local women to map minefields, and giving children mine safety training."

Neither she nor Professor Salter were bold enough to voice the hope, but if the $3,000 Dervish is successful in its field trials, it could be built, worked and repaired by local people so that they could take control of their own lands once more and overcome the crippling terror of mines. That would be a truly fitting memorial to Diana, Princess of Wales.

Jenny Booth is Home Affairs correspondent of The Scotsman

letters

Readers' letters are welcome and should be addressed to the Editor.
Here is a selection of the responses to Issue 12.

THE WALLACE LIQUEUR PRIZE LETTER

FLIES TIME

These days when one is snowed under with paper (even long after retiring) it makes a pleasant change to receive a magazine which is actually worth reading and I put Edit in that category. I've even found time to comment on one of your articles.

I was quite fascinated by Margarete Heck's article on the fruit fly (Drosophila melanogaster) for a number of reasons.

Firstly, because the name fruit fly brings back memories of trying to control the pest in India and the Middle East nearly 40 years ago. To me and to many fruit growers, fruit fly means the notorious Mediterranean fruit fly (Ceratitis capitata), a closely related species to Drosophila, which is still a serious pest in many tropical and sub-tropical countries especially, as the name implies, round the Mediterranean. Fortunately, the ravages which it used to cause, particularly to peaches, have been greatly reduced, but not eliminated, by the use of modern insecticides and improved cultural methods.

Secondly, because Dr Heck's fruit fly can cause trouble nearer home. Its common name is Vinegar Fly and anyone who makes their own beer or home made wine will know the beast and the problems it can cause only too well.

Finally, because the article shows how much science has moved on since I graduated in 1941 when just about everything known about Drosophila and its genetics could be covered in a couple of lectures and DNA probably stood for di nitro aniline.

IAN CALLAN, BSc 1941
LAMPETER, DYFED

Numerical Importance

The article in the Winter Edit 'Written in Stone' on the return of 'the Stone' (of Destiny) to Scotland, while interesting and stimulating, took me back, not to the time of its audacious removal from Westminster in 1950, but to related events in 1952-53.

In 1950, I was in the Army and remote from the 'unsuspected happiness' which home-based Scots experienced. In 1952, George VI died, Princess Elizabeth was his heir, and I was a new student at the Royal Dick. Controversy arose between England and Scotland as to whether the new Queen Elizabeth's number should be I or II. It went to a Parliamentary vote, with the inevitable result. There was national (UK) consternation when, in Edinburgh, the ERII insignia on public buildings were defaced and letter boxes displaying them were blown up.

In the midst of the furore came additional startling news - Robert (Bob) Duncan Watt, a student at the Dick, and others were arrested and accused initially of plotting to blow up St Andrew's House and overthrow the government in Scotland, but the charges were reduced to illicit possession of explosives. (I'm going on memory here, so the legal phrases may be wrong.) Bob was gaoled for a year, but returned to qualify as a veterinary surgeon.

I remember being angry that Elizabeth was crowned II and frustrated at beng powerless to do anything about it. Why should I be, over a Royal number which really has little practical significance for Scotland any more? Because for me, a UK citizen, it epitomises a major reason why a feeling still exists in Scotland for separation from the UK. Central and national institutions such as the Royal family and the government have primary responsibility for unifying the separate, previously independent countries into a unified kingdom, a task which they have either ignored, misunderstood, or perhaps were not even aware of.

If, before the recent general election, John Major had really wanted to impress on me his genuine regard for Scotland in the UK, rather than proposing the return of the Stone, he would have announced the initiation of a process to renumber Eizabeth II of Great Britain etc, etc as Elizabeth I.

DUNCAN MCMARTIN, BVM&S 1957
DAVIS, CALIFORNIA

War of Words

RELATING TO 'A Dirty Business' in the Summer 1997 issue of Edit, the writer refers to battles in the Old Quad, where slurry throwing went on. When I was a student in the early 1930s the medics, of whom I was one, had our lectures in the New Quad, and I do not remember any physical fighting, but we did have a verbal battle between us and the Old Quad via a Varsity paper which was issued from time to time.

My effort in this, as far as I can remember it, ran like this:

The Old Quad is a loathsome place, I wot,
Grey mould, slow rot,
Greek verbs, Pol. Psy.,
Oh dear, how dry.
Just tell me why
Should students swot
Things best forgot.

DR ISOBEL ROBERTSON MBCHB 1940
RONDEBOSCH,
REPUBLIC OF SOUTH AFRICA

Mine's a Wallace

WRITE TO EDIT and win a bottle of Wallace Single Malt Whisky Liqueur.
Edit wants to hear your views on the issues raised by contributors. The writer of the most distinctive letter to the next issue of Edit will win a bottle of Wallace specially donated by Burn Stewart Distillers.
All letters are welcome and should be addressed to Anne McKelvie, Editor, Edit, Information & PR Services, The University of Edinburgh Centre, 7-11 Nicolson Street, Edinburgh EH8 9BE.
Email: A.McKelvie@ed.ac.uk

Thomas Carlyle was just short of 14 years old when he walked from Ecclefechan to Edinburgh in the autumn of 1809 to begin his studies at the University of Edinburgh. Many years later, in 1866, he was to recall those first days in his Reminiscences, now published in the first complete edition from Oxford University Press: this is an excerpt from the chapter 'Francis Jeffrey'.

First Impressions

ILLUSTRATION **ROSS GILLESPIE**

How strangely vivid, how remote and wonderful, tinged with the hues of far-off love and sadness, is that Journey to me now, after fifty-seven years of time! My Mother and Father walking with me, in the dark frosty November morning, through the Village, to set us on our way; my dear, ever-loving Mother and her tremulous affection; my etc. etc. - But we must get to Edinburgh, over Moffat, over Airock-Stane (Burnswark visible there for the last time, and my poor little Sister Mag 'bursting into tears' when she heard of this in my first letter home): I hid my sorrow and my weariness, but had abundance of it, chequering the mysterious hopes and forecastings of what Edinburgh and the Student element would be. Tom and I had entered Edinburgh, after twenty miles of walking, between two and three p.m.; got a clean-looking, most cheap lodging ('Simon Square' the poor locality); had got ourselves brushed, some morsel of dinner doubtless; and Palinurus Tom sallied out into the streets with me, to shew the novice mind a little of Edinburgh before sundown. The novice mind was not excessively astonished all at once; but kept its eyes well open, and said nothing. What streets we went through, I don't the least recollect; but have some faint image of St. Giles's High-Kirk, and of the Luckenbooths there, with their strange little ins and outs, and eager old women in miniature shops of combs, shoelaces and trifles; still fainter image, if any whatever, of the sublime Horse-Statue in Parliament Square hard by; - directly after which Smail, audaciously (so I thought) pushed open a door (free to all the world), and dragged me in with him to a scene which I have never forgotten.

An immense Hall, dimly lighted from the top of the walls, and perhaps with candles burning in it here and there; all in strong *chiaroscuro*, and filled with what I thought (exaggeratively) a thousand or two of human creatures; all astir in a boundless buzz of talk, and simmering about in every direction, some solitary, some in groups. By degrees I noticed that some were in wig and black gown, some not, but in common clothes, all well-dressed; that here and there on the sides of the Hall, were little thrones with enclosures, and steps leading up; red-velvet figures sitting in said thrones, and the black-gowned eagerly speaking to them, - Advocates pleading to Judges, as I easily understood. How they could be heard in such a grinding din was somewhat a mystery. Higher up on the walls, stuck there like swallows in their nests sat other humbler figures these I found were the sources of certain wildly plangent lamentable kinds of sounds or echoes which from time to time pierced the universal noise of feet and voices, and rose unintelligibly above it, as if in the bitterness of incurable woe - criers of the Court, I gradually came to understand. And this was Themis in her Outer House; such a scene of chaotic din and hurlyburly as I had never figured before. It seems to me there were four times or ten times as many people in that Outer House as there now usually are; and doubtless there is something of fact in this, such have been the curtailments and abatements of Law Practice in the Head Courts since then, and transference of it to the County jurisdictions. Last time I was in that Outer House (some six or seven years ago, in broad daylight), it seemed like a place fallen asleep, fallen almost dead.

Notable figures, now all vanished utterly, were doubtless wandering about as part of that continual hurlyburly, when I first set foot in it, fifty-seven years ago. Great Law Lords This and That, great Advocates '*alors celèbres*' (as Thiers has it): Cranstoun, Cockburn, Jeffrey, Walter Scott, John Clerk; to me at that time they were not even names; but I have since occasionally thought of that night and place where probably they were living substances, some of them in a kind of relation to me afterwards. Time with his *tenses*, what a miraculous Entity is he always. The only figure I distinctly recollect, and got printed on my brain that night, was John Clerk; there veritably hitching about, whose grim strong countenance with its black far projecting brows and look of great sagacity fixed him in my memory. Possibly enough poor Smail named others to me; Jeffrey perhaps, if we saw him; though he was not yet quite at the top of his celebrity, - top was some three or four years afterwards, and went on without much drooping for almost twenty years more. But the truth is, except Clerk's, I carried no figure away with me; nor do I in the least recollect how we *made* our exit into the streets again, or what we did next: 'Outer House,' vivid now to a strange degree, is bordered by darkness on both hands.

The Reminiscences of Thomas Carlyle, ed. K.J.Fielding and Ian Campbell, were published on 13 September from Oxford University Press in their World's Classics series.

Time with his tenses, what a miraculous Entity is he always