The quantity of material introduced was varied and showed that profiles percentage recovery dropped from 66% at 0 hours to 11.7% at 12 hours. After a period of 24 hours no material was recovered and that overall the cocktail sticks. The research also looked at persistence and showed that recovery showed min-pointed swabs to be three times more efficient than Forensic Science Service. Initial experiments into efficient material material under fingernails which was carried out by the employees of the Dr Peter Hau gave a presentation on research into persistence of DNA.

(3) The Transfer and Persistence of Biological Material Underneath Fingernails
Dr Peter Hau gave a presentation on research into persistence of DNA material under fingernails which was carried out by the employees of the Forensic Science Service. Initial experiments into efficient material recovery showed min-pointed swabs to be three times more efficient than cocktail sticks. The research also looked at persistence and showed that after a period of 24 hours no material was recovered and that overall the percentage recovery dropped from 66% at 0 hours to 11.7% at 12 hours. The quantity of material introduced was varied and showed that profiles were not obtainable when less than 100 cells were introduced and little difference in recovery was noticed between 100 and 400 added cells. There were very few third party profiles obtained. All profiles obtained from introduced material were low level minor components of mixtures with the recipient/complainant as the major component of the profile. Nail length seemed to have no effect on recovery. The research then went on to look at actual scratching rather than introducing of cellular material and showed profiles still to be unobtainable after 12 hours. In summary the research showed that material of evidential value is obtainable from fingernail scrapings, but efficient and rapid recovery is essential.

(4) The Persistence of DNA After Digital Penetration
The Metropolitan Police use a 2 day sampling limit for fingernail scrapings. Research was conducted to ensure that this time limit is acceptable as digital penetration is alleged in 18% of sexual assault cases. Mini-pointed swabs were used to sample control couples from 1 hour to 5 days after digital penetration. The male behaved as normal making note of the number of times he washed his hands. A female profile was obtained as a low-level component of the mixture, and using low copy number produced up to 50% more female DNA. However, LCN did lead to over-amping problems in the major profile. Overall, DNA was recovered most efficiently up to 24 hours after penetration, so complimenting the policy of the Metropolitan Police.

(5) Cold Case Review
Hazel Johnson gave an insight into the ways in which developments in DNA technology are helping to solve old crimes. Looking specifically at a murder from 1973 it was interesting to see how each time a new DNA technology was developed it was used to reassess the evidence of the case. Thus highlighting how increased training and awareness for police and scientists is leading to a more efficient and comprehensive service. The outcome of this specific case was the generation of a male profile, which matched that of a person originally investigated, but ruled out mainly due to his alibi. This male had died prior to the profile being obtained and therefore his name was never disclosed. In conclusion the effect of new technologies and better communication between scientists and police is having a positive effect on solving old crimes as well as new ones.

Andy Ward
Forensic Scientist
Forensic DNA Services
SPEX SamplePrep's family of Freezer/Mills are cryogenic laboratory mills which chill samples in liquid nitrogen and pulverize them with a magnetically driven impactor. The SPEX SamplePrep Freezer/Mills have been recognized as the world’s most effective laboratory mill, the “mill of last resort” for many normally impossible to grind samples.

- **DNA/RNA extraction**—bone, teeth, hair, skeletal material—recent or ancient, plant and animal tissues, leaves, etc. Sample maintains low level temperatures due to continuous immersion in liquid nitrogen.

- **Pharmaceutical Analysis/Drug Testing**—heat sensitive metabolites, isomers and complex molecules retain their composition as they are not degraded by heat or pressure.

- **Volatile Compounds**—Insures retention of volatile components.

- **Medical Research**—Pulverizing fresh sterilized bone to produce bone cement, grind implant materials for toxicity testing, tissue homogenization.

- **WEEE/RoHS**—Embrittles sample to improve breaking properties, avoid frictional heat, while ensuring volatile fractions are not adversely affected.

- **Plastics/Polymer**—Cryogenic temperature allows sample preparation for difficult to grind plastics and polymers.

Another cool idea from...
Members’ News

Sheilah Hamilton
Forensic scientist and Fire Investigator, Sheilah Hamilton, has left the University of Glamorgan and returned to Hong Kong to re-establish Forensic Focus, the consultancy that she founded in 1989, which provides lawyers, private investigators and insurance personnel with advice on different areas of forensic areas including fire investigation. She is also teaching at the City University of Hong Kong and, as of 1 November 2005, can be contacted at sheilah@cityu.edu.hk.

Members’ Offer

BODIES: THE EXHIBITION
Earls Court, Warwick Street, London SW5 9TA

Through the sensitive presentation of actual whole-body specimens and individual organs, this exhibition will reveal how your body works by exploring it from the inside-out. Fascinating and beautiful, you will see at first hand how this eye-opening exhibition has been designed to inspire and inform our understanding and fascination with the human body.

Call the ticket hotline and quote ‘londonexhibition13’ to SAVE £5 per ticket*

Ticket hotline: 0870 060 3793**
www.bodiestickets.com**
Offer valid Mon–Fri until 31/08/06.
*Regular price: £15 **Booking fees apply.

DIPLOMAS 2005/2006

Specialist qualifications are a major asset to career development - in conjunction with Strathclyde University, The Forensic Science Society offers you the opportunity to take Diploma examinations in the following disciplines:

- Crime Scene Investigation (Section Secretary: Karen Stow)
- Document Examination (Section Secretary: Stephen Day)
- Fire Investigation (Section Secretary: Niamh Nic Daeid)
- Firearms Examination (Section Secretary: David Pryor)
- Forensic Imaging (Section Secretary: Martyn Evans)

* Diplomas accredited by Strathclyde University
* Postnominal FSSocDip
* Open to overseas candidates

Entry Requirements:
- At least five years professional activity (post training) in discipline
- In the case of the Diploma in Fire Investigation and Forensic Imaging, case files must be submitted

Closing date for applications: 31 December (each year)
Exams to be scheduled for Early March (each year)

When crime scene investigation demands maximum effort you’ll need...

Crime-lite™ 80S

The new range of super-high intensity LED forensic light sources from Foster & Freeman

Engineered with high-power LED technology the Crime-lite80S range is as effective as a laser or a 1kW light source. But the portability and battery power source mean Crime-lites give you exceptional freedom of movement at the crime scene and the even, shadow-free beams of light maximise the clarity of evidence. Features that will, almost certainly, increase your ability to locate evidence.

Each Crime-lite80S features 16 high intensity LEDs that provide narrow band illumination in the violet, blue, blue-green or green, for locating fluorescent evidence, or broadband white light, with clip-on colour filters, for general search.

The Crime-lite range is available in kits with accessories and is effective in locating body fluids including blood, tooth and bone fragments and fibres plus fingerprints treated with fluorescent dyes.

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e-mail: sales@fosterfreeman.com http://www.fosterfreeman.com
Forensic Science Society Conferences

11 September 2006
One-Day Joint Conference with the Centre for Forensic Investigation, University of Teesside.
Innovation Centre, University of Teesside, Middlesbrough
“Advances in Forensic DNA Analysis”
Convenor: Shirley Marshall

Aimed at forensic DNA specialists, forensic biologists and those in related professions, this one day conference provides an ideal opportunity for professional development and interaction with fellow specialists.

Topics covered in presentations and workshops include:
- Challenging reporting issues, complex DNA mixtures and low level DNA
- The forensic scientists ‘DNA toolkit’ present and future
- DNA analysis in international criminal investigations and cold case reviews
- DNA testing of difficult substrates, experiences in Bosnia and Thailand.

3-5 November 2006
The Robinson Centre, Wyboston
“Fact and Fiction - the sequel”
Convenors: Colin Ratcliff and Shirley Marshall

Following on the success of the ‘Fact and Fiction’ conference held in Spring 2003 where leading scientists and crime writers presented some fascinating facts and fiction, the Forensic Science Society returns with ‘Fact and Fiction - the sequel’ as the theme of their Autumn conference 2006.

The conference includes presentations and workshops by leading crime scene investigators, forensic scientists and lawyers using case studies to illustrate how fact can be stranger than fiction. Internationally renowned crime writers will also be giving an insight into the world of crime fiction.

A range of specialist scientific workshops will be available on Friday 3 November and it is also proposed that a short crime writing workshop will be offered to those delegates interested in applying their expert knowledge to literary pursuits.

If you would like a programme and registration form for any of these meetings please contact:
The Forensic Science Society,
Clarke House, 18A Mount Parade,
Harrogate HG1 1BX, UK
Tel: +44 (0)1423 506 068 Fax: +44 (0)1423 566 391
Email: Conference@forensic-science-society.org.uk

Guess the object - result
Congratulations to RT Wykes for correctly identifying the mystery item in the last issue of Interfaces as a wooden clothes peg. He has won a T-shirt.

Can you work out what the mystery image is?
Send your guess to the Editor by the beginning of September and the first correct answer out of the hat will win a T-shirt. Good luck!