Calendar of events

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APRIL 2007

25 **A Miracle Happened There: The West and central African smallpox eradication programme and its impact**
Lecture by Dr Joel G Breman, Senior Scientific Advisor, Fogarty International Center, National Institutes of Health, USA), Wellcome Collection, 183 Euston Road, London NW1 2BE
www.ucl.ac.uk/histmed/events/smallpox.html

25 **Peter Ritchie Calder and the Public Culture of 20th-century Science**
Seminar, LSE
Contact: Jane Gregory (**E** jane.gregory@ucl.ac.uk)

MAY 2007

2 **The Last Challenge: The Horn of Africa**
Lecture by Dr Ciro A de Quadros (President and CEO, and Director of International Programs, Albert B Sabin Vaccine Institute, Washington, DC, USA), Wellcome Collection, 183 Euston Road, London NW1 2BE
www.ucl.ac.uk/histmed/events/smallpox.html

9 **Epidemiology and the Science of Detection, 1890–1960**
Lecture by Professor Anne Hardy (Wellcome Trust Centre for the History of Medicine at UCL), Roberts Building, Torrington Place, London
Contact: Carol Bowen (**E** c.bowen@ucl.ac.uk)
www.ucl.ac.uk/histmed/events/

9 **Pain and Laughter: A preliminary history of sentience in southern Africa**
Seminar by Julie Livingston (Rutgers University), Goldsmiths University of London
Contact: Rebekah Lee (**E** r.lee@gold.ac.uk)
www.goldsmiths.ac.uk/departments/history/news-events/cultural-history-medicine.php

23 **The Asiatic Enlightenments of British Astronomy**
Roy Porter Lecture by Professor Simon Schaffer (University of Cambridge), Cruciform Building, Gower Street, London
Contact: Carol Bowen (**E** c.bowen@ucl.ac.uk)
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30 **The Global Eradication of Smallpox: Historical perspectives and future prospects**
Lecture by Professor Donald A Henderson (Professor of Medicine and Public Health, University of Pittsburgh; and Resident Scholar, Center for Biosecurity, University of Pittsburgh Medical Center, USA), Wellcome Collection, 183 Euston Road, London NW1 2BE
www.ucl.ac.uk/histmed/events/smallpox.html

JUNE 2007

28–1/7 **British Society for the History of Science Annual Conference**
University of Manchester
Contact: Executive Secretary (**E** bshs@bshs.org.uk)
www.bshs.org.uk/bshs/conferences/annual_conference/2007_manchester/

JULY 2007

25–29 **Biennial Meeting of the International Society for the History, Philosophy and Social Studies of Biology**
University of Exeter
Contact: egenis@ex.ac.uk
www.centres.ex.ac.uk/egenis/events/ishpssb/

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The next issue of *Wellcome History* is due out in summer 2007.

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ML-3793.p/3.5K/04–2007/PE

WellcomeHistory

ISSUE 34 **SPRING 2007**

wellcome trust

Swami Laxmi Ram's ayurvedic pharmacy in Jaipur, India

THERESIA HOFER

It is difficult to imagine the tranquillity of Swami Laxmi Ram's pharmacy as one walks towards it through Johari Bazaar, a bustling part of the old city of Jaipur in Rajasthan state, India. Narrow alleys are lined by one shop after another, selling things ranging from foodstuffs to bicycles.

This place has a fascinating history about which nothing has so far been written by academics. This article, thus, aims to make readers – and future researchers of ayurveda in western India – aware of this important urban centre, an interesting site to study the past as well as contemporary ayurvedic practice in Jaipur.

I was shown around the neighbourhood by Dr Govardhan, an ayurvedic doctor originally from Andhra Pradesh, and one of his friends, who is a student of ayurveda in London. Dr Govardhan, who has taught at Thames Valley University and the Manipal Ayurvedic University of Europe in London, had kindly made it his mission to introduce us to current ayurvedic practice in Jaipur. We had already spent a few days at his various clinics, which included the state government's Bombaiwala Ayurvedic Hospital near the old Ajmeri Gate and the unit attached to the massive National Institute of Ayurveda (with 600 students studying ayurveda at different levels).

Above and cover: Coconut-based ash to be refined into ayurvedic pills. *Mark de Fraeye*

Right: Preparing medicines at Laxmi Ram's pharmacy. *© Theresia Hofer*

Dr Govardhan, an alumnus of the Institute, had also been a disciple of Professor Ram Prakash, a renowned practitioner in the region. Both had been linked to the 'pharmacy' we were about to visit.

No sign announced that we had arrived at the 'pharmacy' – which, as Dr Govardhan explained, was owing to the organisation's ideal of not advertising itself. Through a large gate, we entered the building and immediately experienced an air of nostalgia.

A group of people were preparing ayurvedic herbal medicines by hand. A woman was patiently forming herbal pills between her fingers, two men were grinding up herbs with mortars and pestles, and another man was stirring an ayurvedic preparation in a pot on top of a gas stove. Dr Govardhan had known the staff for a long time and introduced us to each one of them.

The managing director, Bhajan Das Swami, then introduced us to its history, while we sat in a cool consultation room. The pharmacy was founded by Vaidya Laxmi Ram, who had studied ayurveda at the Maharaja Sanskrit College in 1865. Built according to the rules of Indian architecture as laid down in the Vaastu Shastra (the Indian science of proportion and architecture), it is not only well designed, but also built with careful attention to detail.

His residence, which is known as Laxmi Ram's Bagicha ('Laxmi Ram's Park'), had been a site for meetings with leaders of the Indian independence movement, not least with Jawaharlal Nehru, India's first Prime Minister. As one of the black-and-white photos displayed there indicated, Nehru stayed at this residence in 1942 – a momentous year that saw the launch of the Congress-led Quit India Movement, which brought forth a ferocious response from the colonial government as it was seen to threaten the already-flagging Allied war effort in Asia. Guru Golwalkar, one of the early leaders of the Hindu nationalist party Rashtriya Swayamsevak Sangh (RSS), had also stayed at this residence, highlighting the breadth of the organisation's political patronage. Ram Prakash Swami, another important head of the pharmacy, had cordial relations with the Congress and other political party members and personalities, such as Gaini Zail Singh (India's first Sikh President), Indira Gandhi (Nehru's daughter and ex-Prime Minister), Atal Bihari Vajpayee (ex-Prime Minister associated with the Bharatiya Janata Party) and Jai Prakash Narayan (a prominent parliamentary socialist who had also played an important role in the independence movement).

Dr Govardhan was a devoted disciple of Ram Prakash Swami and had studied under him for 23 years. Although chosen to succeed Ram Prakash after his death, Dr Govardhan did not get his family's permission to do this. So Professor Bhajan Das Swami, who lived with and learned from Ram Prakash during the last eight years of his life, was named as successor in 2003. Currently, he, his designated successor (a 25-year-old called Jagdish Sharma) and some other members of staff live in the Laxmi Ram pharmacy, which is also popularly known as the *Bavaji ki Dawakhana* ('the old man's medicine place').

The medicines are prepared here by hand, in line with the rules prescribed in the *Siddha Bhesaja Manimala*, a book written by Shri Krishnarama (1848/49–1897). A room full of jars and bottles testifies to the large range of formulations produced and prescribed – among them preparations with gold and other precious metals. The advantage of such a small-scale pharmacy and clinic is that one can tailor certain medicines to the physical/mental constitution and the special needs of particular patients. In some cases, medicines produced here are even sought after by patients who have received a consultation in one of the government hospitals.

While the ayurvedic industry is growing in India and abroad, it is not the aim of this small institute to expand. "We want quality and this institute is not here for doing business," Bhajan Das Swami informed us. His interest is to preserve the "purity of ayurveda," which is an ethos that restrains the institute from advertising itself commercially. An understanding of an ayurvedic tradition that diverges from what one might call 'quick-fix ayurveda' also emerged in another conversation with this 75-year-old man. Asked about the role of ayurveda for the contemporary world, he said: "Ayurveda is not about medicines. It is the science of life, how to live, when to wake, what to eat, morality etc. And what is most important is how to be satisfied. Satisfaction equals peace of mind, and peace of mind governs the body." Such statements, together with the fact that the term Swami ('Reverend'), instead of Vaidya ('doctor'), the word usually used for an ayurvedic practitioner, is used for all members of his lineage, contributes to a feeling that this place has aspects of a religious community to it. Only men live there, and as with certain religious groups in India, no garlic or onions are used in the kitchen – situated in the open air on the roof of the house. Also, all foods prepared there are sattwic foods (considered to be calming for the mind).

The pharmacy is an inspiring example of how people engage themselves in preserving ayurveda under circumstances of increasing standardisation and commercialisation. I also believe that this place would prove to be very rewarding for historians and anthropologists interested in conducting research into the early institutionalisation of ayurveda in Jaipur and western India, as well the complex relationship this medical tradition has with religion and politics at a local, national and global level.

Right: Making ayurvedic herbal pills. *© Theresia Hofer*

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Rethinking therapeutic efficacy: environment and medical development in colonial Punjab

LAUREN NAUTA MINSKY

Understanding how faith in healers was produced is a complex topic for historical inquiry and one that is surprisingly little explored in the context of colonial South Asia.

Many scholars implicitly assume that faith in the efficacy of particular healers or healing institutions was exclusively contingent upon such qualities as their knowledge, technical skills, medicines, charisma and affiliated medical tradition (such as ayurveda, unani, folk or biomedicine). Other historians instead assume that attendees of healers, especially those patronised and promoted by the colonial state, did not act out of faith in their efficacy at all; rather, they were directly or indirectly coerced by European and Indian healers, elites and government officials to submit to medical treatment. In either case, the role of 'ordinary' social groups – including peasants, nomadic pastoralists and migrant labourers among others – in the creative making of effective healers and healing institutions is confined to a position of response: acceptance of, resistance to, or picking and choosing between medical alternatives made available to them 'from above'.

My work seeks to interrogate these assumptions by developing an understanding of the making of therapeutic efficacy in colonial South Asia. Adopting an approach that combines aspects of agrarian and environmental history with the history of medicine, I explore the process of medical development in the Punjab plains region during the late 19th and early 20th centuries. In particular, I show how 'ordinary' social groups collectively fashioned effective healers, healing institutions and healing practices in a manner that confounds both assumptions of elite- and healer-driven cultural change, and conventional understandings of medical traditions and therapeutic pluralism in colonial South Asia.

To begin my study, I reconstruct the semi-arid disease environment in which people fell sick and struggled to get well in colonial Punjab. In so doing, I draw attention to the ways in which seasonal hunger, labour demands, migration and comorbidity shaped different social groups' lived experience of the region's disease environment. I also illustrate how changing social relations and activities of production during a period of agricultural expansion, intensification and commercialisation shaped the seasonal basis of sickness, sub-regional variations in disease incidence, and the distribution of morbidity and mortality among social classes and age groups.

In turn, I use my understanding of the region's disease environment to historicise the development of effective healers and healing institutions during the colonial period. Breaking down conventional boundaries between medical 'traditions', I demonstrate that all healers and healing institutions in colonial Punjab acquired characteristic specialisations along seasonal, disease, class, gender and species lines through an ongoing process of negotiation with sick attendees and their kin. As a result, healers in colonial Punjab were not so much seen as representing one or another medical tradition as they were seen as distinctly specialised. For instance, both rawals and the staff of hospitals and dispensaries were best known not as folk and biomedical healers respectively, but as specialists in curing blindness and diseases of the eye.

Above: Case of lancets used by an itinerant Indian doctor, *c.* 19th century.

An understanding of healing specialisation necessarily alters how we conceptualise the role of 'ordinary' social groups in the working of therapeutic pluralism in colonial South Asia. For one thing, patients' determination and selection of appropriately specialised healers was crucial to ensuring that therapy proved effective. Second, patients did not attend just any (or every) similarly specialised healer; rather, they made decisions between healers and laboured to mobilise the resources necessary to ensure that treatment from a chosen healer would result in a cure. As I show, patients' definitions of efficacy were highly dependent upon the resources exchanged between healers and patients, including offerings, fees, taxes, advice, food, medicine, accommodation, bedding, transportation and nursing care. As such, the efficacy in practice of similarly specialised healers varied greatly, and was always defined by patients and their kin in relation to, and in combination with, other similarly specialised healers. Patients' evaluations of efficacy also clearly underwent significant changes throughout the colonial period, as political struggles affected the availability and distribution of resources for healing.

Building upon these findings, I conclude my study with an analysis of the making of effective healing practices during the spring and autumn harvest seasons when the vast majority of deaths in colonial Punjab occurred each year. In particular, I illustrate how patients and their kin both shaped the substance of, and selectively combined, the expertise and resources of similarly specialised healers and institutions to craft altogether novel, and regionally distinctive, seasonal cultures of healing. For instance, when quinine was first introduced into Punjab by Europeans, the efficacy of this 'fever-tree' medicine among poor and malnourished labouring groups was greatly limited by its 'heating' properties (as evident in disabling side-effects such as headaches, vomiting and nosebleeds), the duration of treatment, and the specificity of the drug's efficacy for malaria (as opposed to autumnal fevers more broadly). When faced with rising rates of malaria, however, rural social groups made quinine into an effective part of their existing autumnal fever therapy by consuming it in high doses with 'cooling' dairy offerings and additional fever medicines such as opium and neem. By taking quinine in this way, peasants and labourers dramatically mitigated the drug's side-effects, reduced the length and cost of treatment, and bolstered their resistance to autumnal fevers more broadly.

Thus, instead of thinking about therapeutic pluralism in South Asia as a potpourri of medical 'traditions' and alternatives offered up by healers and elites, there have been and (continue to be) additional logics and forms of agency at work. Glimpsing such logic and agency suggests that the history of medicine in South Asia is complicated in ways that merit greater attention to the active and creative role played by 'ordinary' social groups.

Dr Lauren Nauta Minsky is Assistant Professor of History at North Carolina State University, USA (**E** lnminsky@chass.ncsu.edu).

Darwin Correspondence Project Director

Professor James Secord, from the History and Philosophy of Science Department at the University of Cambridge, has been appointed Director of the Darwin Correspondence Project. His appointment, following the retirement of Professor Duncan Porter, comes at a pivotal time for the project, which has just published the 15th volume of what will eventually be a 30-volume edition of all known letters written both by and to Charles Darwin (pictured).

In total, the number of letters comes to almost 15 000. The collection covers an extraordinary range of subjects, from imperial exploration and travel to the intimate details of Victorian family life. There are ambitious plans to make these rich materials widely accessible. More than 2000 letters are now freely available online at www.darwinproject.ac.uk, and a specially commissioned dramatisation of the letters has been warmly received.

Professor Secord studied the history of science, geology and literature at Pomona College and Princeton University. His writings include studies of Darwin's early geology and the acclaimed *Victorian Sensation: The extraordinary publication, reception and secret authorship of 'Vestiges of the Natural History of Creation'*.

Like Darwin's correspondence itself, the Project is international in scope. The main research team is based in Cambridge University Library, which holds the world's largest collection of Darwin manuscripts. Further researchers are based in the USA, and close ties are maintained with research institutions worldwide.

By **Dr Alison Pearn**, Deputy Director, Darwin Correspondence Project.

HIV/AIDS, cost, value and responsibility

TONY BARNETT

Economists tend to see the impact of AIDS in terms of money values, but that isn't good enough.

In this research I am exploring how we can move away from the idea that costs can only be measured in dollars or pounds and to look at what the loss of a parent – or the inability to work because of AIDS-related illness – really means to an individual and to society as a whole. What it boils down to is: how do you measure the value of love? What is the value of a cuddle to an orphaned child? Over the past 20 years, since I published *AIDS in Africa: Its present and future impacts*, I have been involved with over 50 research projects in the field of the social and economic impact of HIV/AIDS. I am convinced that quantitative accounts of the effects of the HIV/AIDS epidemic using standard economic approaches based on cost do not capture its impacts on societies and economies and therefore misinform allocative decisions by policy makers.

My research focuses on trying to find ways of incorporating qualitative factors into impact assessment and policy making. An HIV/AIDS epidemic has very important social and economic implications for development because it is mainly sexually transmitted and because of the age-specific incidence of the disease. Unlike other epidemics it mainly affects young and mature adults more than other members of society. It therefore affects the structure of populations, increasing the ratio of dependants to productive citizens, and unbalances the supply and quality of labour. For example, a young man of 15 in Botswana today is close to 100 per cent likely to contract HIV infection in his lifetime. One should think what that means for economic, cultural and political futures: in other words, for that elusive thing called 'development'. It seems likely that effective rollout of antiretroviral treatments will only provide a window of opportunity lasting between five and ten years before viral resistance kicks in. How soon and whether depends on the effectiveness and sustainability of treatment programmes. We need to have the surveillance and response systems in place soon to deal with that challenge.

The HIV epidemic is one example of our inability to engage with large-scale events. Over the last 20 years, funding limitations have caused development policy to be increasingly concerned with the minutiae of the immediate present. One result is that very big issues challenging progress towards, for example, the Millennium Development Goals have often received scant attention. Nowhere is this more apparent than with regard to HIV/AIDS and the associated issues it raises. HIV/AIDS is far more than a public health issue: there are few problems in development policy that do not have an AIDS angle, whether we think of livelihood analysis, gender studies, macroeconomic and trade policy, intellectual property rights issues, cultural analysis of change, policy development or myriad other areas. One reason why the medium- and long-terms effects of HIV/AIDS are not well understood is that the current prevalence of HIV positivity (seroprevalence) is an indication of the future, some eight to 20 years ahead. This means that the social and economic costs and other impacts of the high levels of current prevalence (now in the 25–40 per cent range in central and southern Africa, above 1 per cent in Russia, Ukraine and Estonia, and approaching 10 per cent in some Indian states) will not be seen for some years to come. But the epidemic has already had devastating effects in many areas of sub-Saharan Africa. Medical services are at breaking point and there is large-scale orphaning and destitution. Food security is under threat because of the loss of agricultural workers and industrial production is also at risk, particularly in Botswana, where seroprevalence has exceeded 35 per cent in some companies. However, in a relatively rich country where antiretroviral therapy can be provided free or very nearly free, this challenge is being met. This is not the case in many other countries.

But this research is showing how the greatest costs are those borne by families, communities and whole nations as the relations and links of trust that make markets and politics possible break down. Losses in the informal and 'trust' economies are probably of even greater import than losses to production and productivity in the formal economy. What is the effect on national life of loss of local politicians who die prematurely, resulting in more frequent elections with consequent choice of less and less experienced incumbents?

The project will makes particular reference to Russia and Africa, which are at very different stages of the epidemic. Although supported by some fieldwork, in the main this work draws on existing data from a range of academic disciplines, and questions accepted concepts such as 'cost', 'responsibility' and 'impact'. It is essentially a theoretical project, but some fieldwork has been done in South Africa, Uganda, the USA and Russia.

Tony Barnett is an ESRC Professorial Research Fellow at the London School of Economics and founder of LSEAIDS. He is co-author (with Alan Whiteside) of *AIDS in the 21st Century: Disease and globalisation*, London and New York: Palgrave Macmillan; 2006 (**E** a.s.barnett@lse.ac.uk).

Medicine and science in a new medical–surgical context: the Royal College of Surgery of Barcelona (1760–1843)

NÚRIA PÉREZ-PÉREZ

The development of modern surgery was driven by the increasing demand for well-trained medical personnel able to attend the soldiers in the several fronts opened in Europe. The Royal Colleges of Surgery are seen as the more important enlightened medical institutions created by the Spanish Borbonic monarchy.

The Royal College of Surgery of Barcelona was the second such college created in Spain, founded in 1760. Its Catalan location placed it near French and among Spanish military forces. It is relevant to take into account that from 1714, the Borbonic monarchy had closed all the universities in Catalonia – the University of Barcelona included – for political reasons, and built a new university in the more remote town of Cervera. The only institution in the principality where an academic degree related to health could be obtained was the Royal College of Surgery of Barcelona. Indeed, the students of medicine from the University of Cervera had to practise anatomy in the College.

The academic programme developed in the new colleges of surgery was different from the traditional formal education for surgeons. As the Barcelona College was erected next to the Hospital of Santa Creu (founded in 1401), there was a give-and-take between the two. On the one hand, the professors of the College had to work in the Hospital too; on the other hand, the Hospital supplied the patients and corpses to be studied. Moreover, the new physician-surgeons trained there not only were interested in therapeutics but also wanted to know as much as possible about the body's anatomy and physiology, being as they were in competition with its pathology.

As a result of this, at the end of the 18th century and the early 19th century, surgeons, physicians and pharmacists were gathered together in the so-called 'Facultad Reunida', which experienced several organisational problems during the following years. Eventually, in the middle of the 19th century, surgeons and physicians were rejoined in the University of Barcelona's Faculty of Medicine when this university had its rights and funding reinstated. But it is important to take into account the dual condition of the physician-surgeons trained in the College of Barcelona.

In this setting, a new form of transmission of knowledge – and indeed a new method of teaching – was proposed in the regulations of the new colleges of surgeons in Spain (a similar process was underway in other enlightenment scientific institutions of this period, for instance societies and academies). These regulations established the 'junta literaria': a dissertation would be read and then criticised in a public session with both the students and the board of professors of the college. Then, the following week, another professor was charged by the vice-president of the college with elaborating a critical assessment, reading in public session again, plus a critical writing about the dissertation. At the end of the session, each professor on the board would give a short written assessment or comment. It is important to stress that these manuscripts are available in the archives and constitute the most important primary source of my research, which examines the role and the reception of the new sciences applied to healing arts.

Right: Anatomical amphitheatre of Gimbernat, 18th century. Now the Royal Academy of Medicine of Catalonia headquarters. *RAMC, www.ramc.cat*

This documentation makes it clear that chemistry came to be especially prominent in the dissertations expounded at the Royal College of Surgery of Barcelona. By the beginning of the 19th century chemistry had already achieved its own language: a new nomenclature and several gases had been characterised, the theory of combustion had been enounced and laboratory experimentation constituted a common scientific practice. Chemistry should be considered as a professional, liberal, useful activity, with a continuum from research papers, reviews and textbooks to its proper diffusion. In this sense, my work aims to show how chemistry was included in the academic programmes of the Spanish Royal Colleges of Surgery, and how chemistry in this medical–surgical context could have been a crucial tool to understand the unexplained processes that happened in the human body, in sickness and in health.

The development of the study of airs crossed the boundaries between chemistry, physics and medicine. For example, the therapeutic use of aerostatic balloons

was subjected to discussion in the sessions at the Barcelona College; also, the aetiology of yellow fever was thought of in terms of a particular kind of gas, called a 'virus', that was responsible for the contagion. The pros and cons, the controversies aroused by these and other topics given at the sessions (vaccine, tumours, galvanism, syphilis, etc.), are already present in this important set of documents.

The juntas literarias (literary meetings) have provided an extremely rich set of sources, which should be considered as scientific communication practices – as well as a means of exchanging experiences – addressed to the students and other interested audiences. This activity of diffusion of knowledge therefore could be contemplated as a forum from which professional legitimation could be obtained by a peer-reviewing process in front of all the components of a college board.

Núria Pérez-Pérez is a doctoral student at the Centre for Studies on the History of Science, Autonomous University of Barcelona, and a member and researcher at the Science Communication Observatory, Pompeu Fabra University, Spain (**E** nuriap.perez@upf.edu).

Military hospitals and the development of modern medicine in 19th-century Iran

HORMOZ EBRAHIMNEJAD

Military hospitals in 19th-century Iran played a considerable role in the improvement of what was termed 'manual medicine', which had long been neglected by Galenico-Islamic medicine and relegated to unskilled practitioners.

When modern medicine was introduced through court-employed Western physicians, the medical community was roughly divided into two groups. On the one hand, the 'empirics', including surgeon-barbers and rank-and-file doctors that statistically dominated medical practice in both urban and rural areas; on the other hand, the medical elite that consisted of learned physicians trained in Galenico-Avicennian medicine. It was this latter group that, due to its social position and intellectual interests, first came into contact with modern medicine in the 19th century – but without being immediately ready to accept modern ideas, as they were imbued by the Islamicised Greek cosmology that included Galenism.

It is instructive to contrast learned medicine and surgery within the old medical system. The literary and scholarly knowledge provided learned physicians with a social prestige and respect within the medical community. Although comparatively small in number throughout the country, learned physicians represented the ideal image of the medical profession. The surgeons, though, were far from enjoying the same esteem, not only because they were not educated or learned (and they did not need to be), but also because their craft, dealing with blood, was considered unclean.

Nonetheless, the situation changed throughout the 19th century, mainly due to the increasing need for surgeons in the expanding and modernising army. Iran, during the 19th century (except for the two wars with Russia in the Caucasus in 1801–13 and 1826–28), sustained no major military conflict. However, the nature of the Qajar government, and the way it administered the country and levied taxes, required a quasi-permanent military mobilisation. With the expansion of the troops, field as well as base hospitals were created to deal with various diseases multiplied through the agglomeration of soldiers in caserns.

In my work, I argue that state medical institutions, particularly military hospitals, provided the major impetus for the development of modern medicine in 19th-century Iran in two ways: first by accelerating the process of medical professionalisation, and second by the development of clinical and anatomical medicine, inasmuch as military modernisation caused surgery and hospital practice to gain momentum.

The modern military and state administration transformed medical organisation, at least at the state level, by the introduction of a more regular and formal system of remuneration. Not only did the establishment of a regular salary by the state have a financial aspect, but also the state salary (*hoquq-e divâni*), confirmed by royal signature, conferred social legitimacy and legal sanction to the activity of the physicians. This strengthened their social and professional status and distinguished them from rank-and-file doctors.

Unlike contemporary Europe, 19th-century Iran did not experience any noticeable economic, social and political transformation that could result in fundamental change to the medical system. The modernisation of the army, although limited to its being provided with discipline and new weapons, was the main factor that affected medicine and particularly surgery – which, within the old system, was disdainfully called 'manual medicine' (*tebb-e yadi*). In this respect, the role of the military in the development of modern medicine was even more important in Iran than in Europe.

In the second part of the 19th century, we find even among the learned traditional physicians an increasing emphasis on the importance of 'manual medicine' or 'practical medicine' (*tebb-e 'amali*). Writing in 1877, the traditional court physician Mirzâ Mohammad Kâzem Rashti – who accumulated the court titles of 'prince of physicians' (*Malek al-atebbâ*) and 'philosopher of the state' (*Filsuf al-dowleh*) – warned his colleagues that not all throat diseases could be cured by humoral treatment (*eslâh-e mazâji*); in some cases these required surgical operations, which should not be ignored.
The distinction between humoral medicine, based on theory, and 'practical' or 'manual' medicine persisted, but surgery and clinical medicine gained currency at the turn of the 20th century.

The influence of Western medicine was certainly crucial in medical modernisation. Dr Polak, the instructor of anatomy at the Dâr al-Fonun (polytechnic school), was during 1851–60 the first to teach anatomy and surgery at the school and the military hospital.

By the late 19th century and first decades of the 20th century, other dispensaries and civil hospitals were established by foreign missionaries or physicians. Following the chequered victory of the Constitutional Revolution (1906–11), a parliamentary law compelled physicians to hold permission or diplomas from confirmed medical authorities to practise.

Many practitioners who applied for such diplomas referred, in their application letters, to their periods of 'practical' training at a hospital or at the cabinet of famous physicians, including the Western physicians. In my work, I argue that it is misleading to view Western physicians as the sole cause or engine of the process of medical modernisation. Rather, it was the social and political context – in this case, military modernisation aimed at strengthening the central state – that necessitated the introduction of modern medicine in Iran, just as it caused local traditional medicine to evolve.

Dr Hormoz Ebrahimnejad is a Wellcome Trust Lecturer attached to the Department of History, University of Southampton.

Hormone replacement therapy in America

ELIZABETH SIEGEL WATKINS

Every woman who lives to a certain age reaches menopause. Decreased oestrogen production in the years during and after menopause has been blamed for causing everything from hot flushes to heart disease to diminished femininity. One possible remedy has been to replace that lost oestrogen with hormones from outside the body.

The scientific and commercial development of pharmaceutical oestrogen in the 1930s produced the hormone replacement therapy (HRT) that would become the most popular drug in America by the 1990s. Physicians prescribed HRT not only to relieve the temporary symptoms of menopause but also to forestall the diseases of ageing and to maintain youthfulness. Opinions on the use of this drug have been sharply divided: it was ballyhooed as "one of medicine's most revolutionary breakthroughs" and condemned as "the greatest experiment ever performed on women".

The story of oestrogen is woven from several strands: blind faith in the ability of science and technology to solve a broad range of health and social problems; social and cultural stigmatisation of ageing; shifting meanings and interpretations of femininity and female identity; and the pitfalls of medical hubris in the 20th century. Oestrogen became much more than a drug in the American pharmacopoeia, as media representations of its roles in both medicine and culture reflected the engagement of the expanding authority of medical science with transformations in perceptions of ageing women in society.

Simply put, too much was expected of oestrogen. Had it remained a short-term antidote for menopausal symptoms, it would have generated little controversy. Indeed, to this day, oestrogen remains the single most effective remedy for the hot flushes of menopause, and few critics dispute its value as a temporary treatment. But because it was promoted as a lifelong therapy, even as an elixir of life, with so many promised benefits, the stakes got higher, and when it failed to live up to the hype, disenchantment and incrimination ensued. The chequered history of this controversial drug therapy is the subject of my forthcoming book, *The Estrogen Elixir: A history of hormone replacement therapy in America*.

Sixty years after the Premarin brand of oestrogen received approval from the US Food and Drug Administration (FDA) as a treatment for menopausal symptoms, a government-funded study of its sister

product Prempro (a combination of oestrogen and progestin) reported that Prempro increased the risk of heart attacks, stroke, blood clots and breast cancer. But the story of oestrogen neither begins in 1942 with FDA approval of Premarin nor ends with the findings of this study in 2002. Its roots date back to the 19th century, and its life as a medical therapy continues today. The biography of HRT spans the 'long' 20th century, from its conception in the 1890s, through its infancy in the 1920s and 1930s and its midcentury adolescent growth spurt, to its maturity into one the most prescribed drugs in America in the 1980s and 1990s – and, in the past few years, to hints of its senescence. As the times have changed – in terms of the status of science and medicine, the roles of men and women in society, and attitudes toward ageing – so too have the rationales for the prescription and use of hormone therapy.

Right: Oestrogen skin patch used in HRT.

This book tells the story of the rise and fall, and rise again and fall again, of oestrogen and its promise to stave off the effects of ageing. This was not a conspiracy of pharmaceutical manufacturers and physicians to dupe women, although drug makers aggressively promoted their products and many doctors believed in oestrogen's healing powers. Women were also active agents, motivated by both personal concerns and cultural forces to use oestrogen as one way to take control of the ageing process. The added support of research scientists, government regulators and the popular media helped to build the oestrogen empire. Throughout its history, there were dissenting voices from health activists, physicians and women themselves. But its widespread use – by some 40 per cent of the postmenopausal population by the end of the 20th century – indicates the willingness of many Americans to put their trust in this drug product.

Three themes guide my explanation of the development, spread and shifting fortunes of HRT in America. The first concerns the authority of medical science in American life and explores how the relationship between science and society shaped the dissemination and reception of HRT. The second theme considers the significance of the medicalisation of menopause and ageing as oestrogen fell in and out of favour. I aim to develop a nuanced interpretation of the process of medicalisation, within the broader context of the dominance of health as a cultural preoccupation in recent American society and its implications for multiple approaches to and interpretations of menopause and ageing. The third theme deals with the varying meanings of and frameworks for ageing in America and locates HRT in the cultural context of changing expectations and roles for older women in American society. By using oestrogen as a lens through which to illuminate the complex and changing relationships between menopause and ageing, drugs and alternatives, doctors and patients, and providers and consumers of healthcare services, products and information, I hope to shed historical light on one of the most pressing debates in medicine today.

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Roy Porter Memorial Scholarship

The Second Roy Porter Memorial studentship has been awarded to Erin Sullivan to support her PhD research into 'Physicke for mind, body and soul: the diagnosis, treatment and experience of melancholy in early modern England'. Erin was selected as the most outstanding student from a very strong field of applicants; the selection committee was particularly pleased to be able to recommend a student whose work continued Roy's own interests in issues about mental health.

Erin is enrolled at the Wellcome Trust Centre for the History of Medicine at UCL, where she will work under the supervision of Professor Hal Cook and Dr Andrew Wear. Previously she studied at the Shakespeare Institute at the University of Birmingham, where she was awarded a Distinction in her MA, and at the University of North Carolina, where she graduated with highest honours in English and Italian.

The Centre wishes to record its thanks to the Wellcome Tust for its generosity in continuing to celebrate the work of Roy Porter in this way.

By **Professor Hal Cook**, Director, Wellcome Trust Centre for the History of Medicine at UCL (**E** h.cook@ucl.ac.uk).

Picturing the modern body: posters of health and hygiene in visual culture

ROGER COOTER AND CLAUDIA STEIN

One of the most striking features of contemporary culture is not just the dominance of the visual over the printed word, but the visualisation of things that are not in themselves visual. All kinds of data and experience now submit to this, perhaps nowhere more so than in medicine, where everything from fetal heartbeats to brain activity has been transformed into visual patterns.

The inculcation of such visualisation is not confined to hospitals, doctors' offices and TV documentaries, however. The encounter is far more pervasive; indeed, it is inescapable in our everyday lives through the relentless proliferation of body images in all forms of mass media.

Our study explores how the visual came to occupy such a powerful place in the production of meanings of our physical and mental selves. As such, it is less concerned with the formal and self-evident features of modern medicine than with study of visual culture itself – a field of research still very much in the making and without clear disciplinary boundaries. The risks and ambiguities involved in its pursuit are all the more felt if one wishes (as we do) to understand visual culture not simply either as the 'history of images', handled with a semiotic notion of representation, or sociologically, with images granted almost autonomous independent power in reality's construction. Instead, in this study we approach visual culture in an interactive manner. Put simply, our interest is in how the visualisation of the human body shapes and is shaped by the wider culture in which it occurs.

Pictorial posters dealing with matters of health and hygiene, we submit, provide an ideal medium through which to study this interactive mediation. After all, these cheap, mass-produced and disposable material objects were never designed as unique pieces of art for art's sake. They were (and are) intended to make an impact and then disappear (which partly accounts for their historical neglect). In itself, the very fact of their ephemerality, along with their pervasiveness and the informality of their setting, helps substantiate the quotidian nature, as opposed to the strictly medical venue, of the visual cognisance of the human body.

Right: German anti-smoking poster, *c.*1900.

As important, historically, is the fact that these now taken-for-granted objects were not always thus regarded, nor inevitably destined. Since their first appearance in the mid-19th century, posters in general (and those dealing with health and personal hygiene in particular) endured moments of intense struggle and contestation. Thus their history permits us to see how the visual has interacted with its surrounding social world, and to show how this relationship has changed at particular moments, as well as with time and place. Further, with regard to other media such as film or the internet, we can see how, as one mode of representing reality loses ground, another can take its place without the other disappearing.

Our study pursues these themes through micro-histories that explore the emotional impact, processes of appropriation, and social and cultural contexts of poster use. Our first site is Munich at the turn of the 20th century – a place where we can link modern medicine to mass culture through the emergence there of both poster art as a self-consciously modernist form and new ways of representing the body based on popular celebrations of scientific medicine within a rapidly changing public healthcare system. While Munich refers us to a moment when health-related posters were struggling to gain public purchase, our second site, the London Borough of Bermondsey in the interwar period, re-creates a time when posters were an accepted form in health education. Bermondsey's socialist leaders firmly believed that modern medicine, especially in its preventative guise, was one of the primary means to improving the health and welfare of populations, and they were exceptional in the extent of their attachment to visual media of various types. Thus this site allows us to explore how political decisions were made around the use of different types of media for health education. That Bermondsey was exceptional in its use of visual health propaganda also allows us to ask questions about why the rest of Britain

was not generally involved in this kind of activity, a route for us to broader questions about the relations between posters and commercial advertising in Britain, as well as the nature of the involvement of state, local and charitable agencies.

How posters actually became an accepted feature in public health education (as shown in Bermondsey) is explored in our third site, the theatre of war. It was during World War I that posters in general lost their purely commercial character and became an appropriate means for the propaganda of state agencies and voluntary bodies. Among our concerns here are not only the mechanics and rationalisations of this engagement (and how it shifted during World War II), but also how posters in this context helped serve the creation of an imagined community of healthy citizens.

Our fourth and final site of interaction is the AIDS pandemic of the 1980s and 1990s. Working outwards from Toscani's famous poster ad for the United Colors of Benetton, 'Dying on Aids' (1992), we explore the changing relationship between public health and commercial advertisement in the course of the breakdown of welfare medicine, as well as transformations in the public perception of biomedicine. We also engage here with the tensions between global marketing strategies and local ways of viewing. These themes we carry into our epilogue where, examining the latest campaigns for AIDS (franchised through the World Health Organization and its new subdivision UNAIDS), we document the deliberate use of locally targeted multimedia strategies intended to transform health into a commercial good for individual consumers shorn of citizens' rights.

All these sites of negotiation permit us to argue that the history of the modern body is to all intents and purposes the history of its visualisation. The origins, materiality and discursive structures of both, we contend, were simultaneously constructed and depicted. Posters of health and hygiene, in their capacity to make this apparent – as well as to force reflection on the tensions between local knowledge and practices and global market strategies – fully justify historical attention. The extensive collections in the Wellcome Library, the National Library of Medicine and the Deutches Hygiene Museum need not serve only decorative ends.

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On the trail of Dr Lamaze: a transnational history of childbirth education, 1930–80

PAULA A MICHAELS

At the 1950 International Congress of Gynaecology in Paris, Soviet Professor Anatoly Petrovich Nikolaev delivered his speech before a rapt, but largely sceptical crowd. He spoke of Pavlov's theory of conditioned response and how its obstetric application had at last brought women the miracle of painless childbirth.

Known as psychoprophylaxis, or PPM (for 'psychoprophylactic method'), this approach taught women to react to uterine contractions not as pain, met with fear and resistance, but merely as sensations to be encountered with a trained reflex of muscular relaxation. Nikolaev claimed astounding results that attested to the beneficence of Comrade Stalin, whose ceaseless concern for women, he asserted, had led to the development of this method. He assured his audience that Soviet women now enjoyed painless childbirth without reliance on debilitating and sometimes dangerous analgesia and anaesthesia, which were prevalent in Western obstetric practice and which had kept women from being awake, alert and able to participate in childbirth. Mounting evidence also demonstrated that pharmaceuticals quickly passed the placenta and not infrequently led to depressed breathing, or anoxia, among newborns. Given these risks, and patient dissatisfaction with twilight sleep and other forms of medicated childbirth, Nikolaev's revelations came at a critical juncture in Western obstetrics.

In hindsight, that speech can be seen as a moment of transmission, when knowledge of and interest in PPM crossed the newly descended iron curtain. Among those listening that day was French obstetrician Fernand Lamaze, whose name became synonymous with PPM in the USA. Still tantalised by Nikolaev's words, Lamaze seized the opportunity in September 1951 to travel to the USSR. He sought out Nikolaev at his Leningrad clinic and, after witnessing PPM at work, returned to France to spread the word with a convert's zeal. By the decade's close, PPM had become widespread in France. The method made its way across the Atlantic: in 1960, a handful of US supporters founded the American Society for Psychoprophylaxis in Obstetrics, today known as Lamaze International.

In *On the Trail of Dr Lamaze: A transnational history of childbirth education, 1930–80*, I trace the story of modern efforts to prepare women for childbirth and alleviate pain during delivery through education, and both physical and psychological training. The book begins with the Soviet drive in the 1930s and 1940s to develop a method of painless childbirth, chronicles the rise of Soviet PPM in the late 1940s, follows its transmission to France in the 1950s, and then its migration to and development in the USA during the 1960s and 1970s. While faith in the liberating power of science was powerful across developed countries, nowhere was it stronger than in the Soviet Union. Promising women freedom from the pain of childbirth as part of its wide-ranging modernising mission, the Soviet state and Communist Party catalysed the PPM drive. In the West, by contrast, a handful of professional supporters initially spread the word, but as medical consumers women played an instrumental role in popularising the Lamaze method. Encouraging women to take control of their own bodies and health became a central concern for feminists in the 1970s, who saw the Lamaze method as a way to empower women in the delivery room. My study ends in 1980, when the so-called walking epidural, which allowed labouring women to be fully awake and able to participate without pain, became standard obstetric practice in both France and the USA. Back from the brink of fulfilling its revolutionary potential in the hands of feminists, Lamaze became mainstreamed into a conventional, medicalised model of childbirth and largely divorced from the efforts of those who advocated childbirth without the routine use of analgesics and anesthesia. Meanwhile, in the Soviet Union the method continued to be nominally taught and practised, but research on it ceased and the question of pain relief in childbirth was largely relegated to the back burner, seen as a low priority in an environment of scarce resources.

My study examines the transfer of PPM from one national setting to another and how those shifting sociopolitical contexts reshaped its application. Using medical journals and textbooks, the popular press, and a variety of archival records, I explore arguments within the medical communities over this childbirth preparation approach, its popular reception, negotiations about it between medical professionals and medical consumers, and the ways in which the discourse of PPM inscribed with new meaning notions of a woman's civic duty, parenthood, childbirth, pain, and what constitutes 'natural' and 'normal' for women during labour and delivery. The transnational nature of this study provides an opportunity to look at these meanings in diverse culturally and historically specific settings.

Efforts to spare women the pain of childbirth cannot be divorced from the broader national and international political environments in which they emerged, and the history of PPM provides a way to trace developments in these broader political concerns. The development of a childbirth education method that promised pain relief without the use of risky analgesia or anaesthesia dovetailed well with state-sponsored pronatalism, as the pain of childbirth was widely believed to be a significant impediment to fecundity. Cold War considerations also cast their pall over the prepared childbirth movement. The association of psychoprophylaxis with Pavlov and Soviet science proved to be a liability and inhibited its spread, especially to the USA, where medical professionals denounced it on ideological rather than scientific grounds.

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New publication

Leprosy and Empire: A medical and cultural history by Rod Edmond.

This is an innovative, interdisciplinary study of why leprosy, a disease with a very low level of infection, has repeatedly provoked revulsion and fear. Rod Edmond explores, in particular, how these reactions were refashioned in the modern colonial period. Beginning as a medical history, the book broadens into an examination of how Britain and its colonies responded to the believed spread of leprosy. Across the empire this involved isolating victims of the disease in 'colonies', often on offshore islands.

Discussion of the segregation of lepers is then extended to analogous examples of this practice, which, it is argued, has been an essential part of the repertoire of colonialism in the modern period. The book also examines literary representations of leprosy in Romantic, Victorian and 20th-century writing, and concludes with a discussion of traveller-writers, such as R L Stevenson and Graham Greene, who described and fictionalised their experience of staying in a leper colony.

Published in: Cambridge Social and Cultural Histories. Cambridge: Cambridge University Press; 2007.

Cold War microbiology and the health of nations

JUSTIN SURAN

In their classic paper on "the substance inducing transformation of pneumococcal types", Oswald Avery, Colin MacLeod and Maclyn McCarty singled out the nucleic acid DNA as the genetic material.

When their paper appeared in 1944, all three men were engaged in medical scientific projects of interest to the military. Avery had been appointed to the Army Epidemiological Board (AEB), whose members advised the Army Surgeon-General on the control of infectious diseases; McCarty had been assigned to the Naval Medical Research Unit at the Rockefeller Institute while on active duty in the Navy Medical Corps; and MacLeod was directing the AEB's wartime commission on pneumonia. In fact, in 1944, MacLeod was supervising a clinical trial of a pneumococcal pneumonia vaccine at the Army Air Force technical school in Sioux Falls, South Dakota.

The wartime activities of this famous research team illustrate two interconnected themes at the heart of my work-in-progress: first, the significance of microbiology to the US military from the 1940s to the present; second, the influence of the military on the development of the health sciences and the emerging field of population health. I have identified seven individuals whose activities as scientists and institution-builders bring into focus the dynamic historical relationship between the US military establishment and the medical sciences. By tracking their involvement in military projects and following their movement in and out of military contexts, I plan to reconstruct an important chapter in the history of the life sciences and public health.

The individuals I've chosen to study are:

- Alfred Newton Richards, the pharmacologist who helped to make penicillin widely available as chairman of the wartime Committee on Medical Research;
- Harold C Hodge, the Manhattan Project's senior toxicologist and an ardent postwar proponent of water fluoridation;
- MacLeod, the above-named microbiologist whose career epitomised the emergence of molecular biology;
- Alexander D Langmuir, chief epidemiologist at the Communicable Disease Center and architect of the Epidemic Intelligence Service;
- Richard E Shope, who isolated the first papillomavirus and later chaired the military commission charged with developing protective measures against biological weapons;

- Joseph E Smadel, a virologist-rickettsiologist at the Walter Reed Army Institute of Research who played a leading role in numerous infectious disease projects in South, East and South-east Asia;
- Robert E Shope – Richard Shope's son – whose service in the US Army Medical Corps launched a lifelong career in the study of arthropod-borne viruses and emerging infections.

The Surgeons-General of the Army, Navy, and Air Force have traditionally borne responsibility for the health of US service members. Since World War II, however, the military has become increasingly invested in the health of civilian populations, for example in defence against biological weapons. Over the last 60 years, the military has become one of the most powerful institutions in world history, as reflected in the size of the Pentagon's budget, the sophistication of its weapons systems and the impact of its global interventions. True to its Cold War mission to fight "anywhere in the world at any time", the military was increasingly preoccupied with

Right: Alfred Newton Richards, chairman of the wartime Committee on Medical Research.

tracking epidemics in other countries and studying diseases that occurred with greater frequency in other parts of the world.

Understanding the military's historical role in the development of the health sciences is particularly important in the USA, where there has been relatively little consensus about the role of the state as a guarantor of collective wellbeing and where the voting public has frequently resisted the expansion of health-improving social programmes. Since the 1940s, national security concerns have sometimes justified a higher degree of health socialisation and coordination of public and private participants in targeted R&D programmes (as in the case of vaccine development). The Cold War, embodied in the sprawling institutions of the national security state, at times produced the forms of social solidarity and public investment necessary to improve health within and even beyond the nation's borders.

Right: A US Army Transportable Bacteriological Laboratory.

To recognise the military's critical contributions to medical science and to the health of populations is not to advocate or endorse the militarisation of medicine and public health. It is to argue that the history of medicine and the life sciences ought to encompass the study of modern militaries as institutions that have significantly affected the health of large populations.

Just days after Nikita Khrushchev denounced his predecessor Stalin at the Twentieth Congress of the Communist Party, Colin MacLeod embarked on an official tour of biomedical research facilities inside the Soviet Union. Joining MacLeod on this medical scientific mission were the virologist Richard Shope of the Rockefeller Institute, the University of California, San Francisco's Karl Meyer, Michael Shimkin of the National Cancer Institute, and Yale's John Rodman Paul. No random assortment of visitors, these five men were leading experts in their fields: together their knowledge spanned epidemiology and public health, microbiology and immunology, cancer and infectious disease. Over several weeks in March 1956, MacLeod and his colleagues had the opportunity to observe the structure of the Soviet public health system, the production of sera and vaccines, and biomedical research projects on diseases ranging from influenza to rickettsialpox.

Other historians of science have discussed the profound significance of nuclear physics and nuclear weapons to the history of the 20th century. Shadowing and at times intersecting the history of atomic bombs and thermonuclear devices is a less familiar history of antibiotics, vaccines and infectious agents. Richard Shope, one of the 1956 visitors to the USSR, was also the chair of a military scientific commission working to develop the US biological weapons programme. MacLeod was a member of Shope's commission. By the mid-1950s, the USA and the Soviet Union had developed active, state-sponsored biological weapons programmes alongside their active, state-sponsored biomedical research programmes.

Just as nuclear science and technology had both military and civilian uses, microbiology and medical science were dual-use. Bringing epidemiologists, toxicologists and virologists into mainstream accounts of Cold War science – accounts now dominated by physicists, mathematicians and engineers – promises to deepen our understanding of the 'military–industrial–academic complex'.

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Science and medicine in the multinational empires of Central and Eastern Europe, *c.*1800–1918

TATJANA BUKLIJAS

Historians have shown how Western powers employed science and medicine to reinforce their rule and propagate their culture in the countries they colonised. Research has highlighted how the colonial socioeconomic organisation affected the health of populations and how, simultaneously, Western medicine itself was profoundly reshaped by encounters with new cultures, diseases and medical practices.

These studies have raised important questions that underpin the current debates about science and medicine in the post-colonial and post-Cold War world. Yet they are exclusively based on Western powers with non-European colonies and consequently fail to offer explanatory frameworks for the role of science and medicine in the expansion and maintenance of two geographically contiguous empires of Central and Eastern Europe: the Habsburg Empire and Russia. Little historical attention has been given to the ways in which the particular forms of governmentality, as well as the multiethnic and multicultural environments of these empires, shaped medical and scientific knowledge and practices.

It was precisely this historiographical blank space that inspired us to bring together scholars working on diverse topics in history of science and medicine, from astronomy to psychiatry, but sharing a common interest in the ways in which the social, political and ethnic make-up of these empires interacted with scientific and medical education, research and practice. The one-day workshop titled 'Science and Medicine in Multinational Empires of Central and Eastern Europe, *c.*1800–1918' took place in Cambridge on 23 June 2006.

The first session, titled 'National styles and international connections,' examined the issue of national styles in science and medicine. Michael Gordin (Princeton University) used the history of a Heidelberg-founded scientific journal to explore the making of Russian chemistry. Tatjana Buklijas (University of Cambridge) showed how two opposing directions of surgical education and research advocated by Viennese professors in the 1870s reflected a split along ethnic lines in the Austrian middle class. The theme of the impact of multiethnicity on medicine in the Austro-Hungarian Empire continued in the second session on 'Language, architecture and psychiatry'. Leslie Topp (Birkbeck College, University of London) examined the architectural resources used to construct the Austrian psychiatric institution. Hans-Georg Hofer (University of Freiburg) discussed how the ethnic diversity of the Habsburg army in World War I shaped the clinical treatment of war neuroses.

In the afternoon, the last session on 'Mapping the empire: astronomy, anthropology and ethnography' brought together three papers that explored how science contributed towards not only the maintenance but also the reform of the empires. Daniel Beer (Royal Holloway College, University of London) discussed how physical anthropology participated in and shaped the debates about reform, modernisation and political legitimacy in late 19th-century Russia. Simon Werrett (University of Washington) examined the symbolic role of the central observatory at Pulkovo near St Petersburg as a showcase of Russian astronomy. Finally, Emese Lafferton (University of Cambridge) explored the role of psychiatry, physical anthropology, ethnography and eugenics in producing feasible models of nationhood for a modern state. The workshop was closed with a lively discussion. A selection of papers from the workshop will be published in a special section of *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* in 2007.

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Collection of nursing history sources for teaching purposes

CHRISTOPH SCHWEIKARDT

On 12 and 13 May 2006, the second workshop of the 'Collection of Nursing History Sources for Teaching Purposes' project took place in Stuttgart at the Robert Bosch Foundation's Institute for the History of Medicine.

The project is financed by the Foundation's 'Contributions to Nursing History' programme. It is part of intense endeavours to promote nursing history, together with the 7th International Congress on Nursing History in Basel in March 2006 and an International Nursing History Congress in Stuttgart in September 2006.

The workshop had been organised by Sylvelyn Hähner-Rombach, Barbara Randzio and Christoph Schweikardt from the steering committee in order to discuss and determine the themes of the source selection for the project's planned monograph on nursing history, as well as deciding the selection process and the rules for the writing of commentaries to each source selected.

It was agreed that the sources will be organised into five chapters within the monograph: 'Nursing practice', 'Religion and nursing, charity, religious denominations and nursing ethics', 'The impact of health and social policy on nursing professionalisation', 'Nursing and eugenics, nursing and National Socialism' and 'Gender aspects in nursing'.

Sabine Braunschweig (Basel), Ulrike Gaida (Berlin), Karen Nolte (Würzburg), Sünje Prühlen (Hamburg), Heinrich Recken (Solingen), Susanne Kreutzer (Berlin) and Ulrike Winkler (Berlin) presented selected nursing history sources and explained their advantages for teaching purposes. They highlighted a broad range of topics, which included: the debates between professional nursing organisations, conflicts between deaconesses in letters to the motherhouse, and an advertising brochure of the Berlin Senate from the 1960s, which presented nursing as a modern profession. The debate also focused on source characteristics: they should be easy to understand and not too long. For foreign-language sources, a translation into German would be necessary, and sources written in Old German or Middle High German would need a transcription.

Then the discussion turned to two pilot commentaries provided by Hähner-Rombach and Dorothe Falkenstein. These proved valuable for finalising the guidelines for commentary writing. Owing to a broad consensus that nursing history teachers are not necessarily historians, each source selected for the monograph would be accompanied by a commentary, including background information on the political and social situation and do without details only of interest to researchers. After very lively and enjoyable discussions, the day ended with dinner in a restaurant.

On the second day, the workgroup discussed the source selection process further in order to lay emphasis on subjects of particular importance and interest to nurses. Then the steering committee requested submissions of further suitable source material, so that a selection could be made to appear in the monograph itself and/or an extended digital version (as a CD and/or online). It was agreed that attendees and other experts would be asked to write commentaries to the selected sources as well as introductions to the five chapters. For publication, a further application for a grant from the Robert Bosch Foundation would be submitted.

Right:
A meeting of the German Nurses' Association, 1912.

The workshop provided a further step forward in order to build a network among nursing history researchers and teachers in German-speaking countries. So far, researchers on Protestant nursing were very well represented in the workgroup, whereas better contacts to researchers on Catholic nursing are desirable. The wide range of research and teaching experience among the participants resulted in very useful advice for the concept of the planned monograph.

A report of the first workshop appeared in *Wellcome History* issue 32, page 14.

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The Nazi T4 euthanasia campaign

MARION HULVERSCHEIDT

In September 2006, an international colloquium on the T4 Nazi euthanasia campaign took place in Heidelberg, Germany. Ten sections that involved more than 40 contributions, a panel discussion and two evening lectures offered an opportunity to explore the historical conditions, the campaign itself, and its consequences for contemporary medicine and medical ethics.

The codename T4, derived from the organisation's central office in the Berlin Tiergartenstraße number 4, indicated the organised assassination of more than 200 000 mentally ill and emotionally disturbed citizens during World War II. In the relatively short time between September 1939 and August 1941, six 'killing institutions' and a perfidiously organised administration murdered more than 70 000 ill and 'unworthy-of-living' people, and many others were murdered by collaborating institutions in the years that followed. Patient relatives received letters with falsified statements on reasons of death, place and date of death. The euthanasia campaign was intended as a trial run for the million-fold murder of European Jews. Historical science classifies it as the implementation of the race hygiene policy of the National Socialists. In 1941, the very well-organised killing was stopped, but was succeeded by the so-called 'wild euthanasia', which mainly relied on starvation and overmedication with barbiturates in order to achieve its goals, to get rid of the human lives that were considered as burdensome to society.

International experts gathered in Heidelberg to share information on the T4 campaign and to evaluate the data collected. The organisers – Maike Rotzoll, Petra Fuchs and Gerrit Hohendorf – were successful in drawing well-known representatives of international historical science, from memorial institutions, victims' associations and other organisations. In recent years, they themselves had headed an extensive research project, funded by the DFG (German Research Foundation), on the qualitative and quantitative evaluation of T4 patients' files kept at the Federal Archive in Berlin. The colloquium's objective was critical reflection on and evaluation of the research results achieved within this project.

The difficult question as to whether it is morally appropriate to subject the patient files of the victims of systematic murder to a quantitative analysis may clearly be answered affirmatively. The admittance of 80 items into a database allows conclusions on the entire campaign and its organisation, conclusions that were impossible to draw from the study of single cases. A comparison cohort of files on patients of mental clinics who were not included in the T4 euthanasia campaign allows further conclusions. The larger survey also makes it easier to place individual life histories into a context.

Within the T4 campaign, medical experts evaluated patients hospitalised in mental asylums and clinics, based on their files and special registration forms (*Meldebögen*). The evaluation criteria were oriented by so-called 'race hygiene' standards. Up until very recently, it had been assumed that the label 'unfit to live' was used to define citizens suffering from hereditary diseases, which supposedly posed a threat to the quality of the German *Volk*. This view is currently undergoing revision, as the selection criteria seem to have been subject to wide variations, depending on the area as well as the particular point in time. The capacity to work, and therefore the measurable exploitability of a patient, seems to have had greater influence on the expert evaluation than actual hereditary disease or other reasons related to racial hygiene.

This result is rather startling, particularly as the T4 experts were also involved in the anthropological investigation that intended to chart the entire German population. This charting process was aborted in 1939, but the selection of asylum patients was not a replacement for that survey. It is therefore necessary for historians to continually verify the actual practice, and not to simply accept the feigned motivations of the perpetrators. The official justification for the state-organised mass murder was constantly used to mask petty theft and profit-seeking, which seem to have been a central component of this era of medical history: the victims' dates of death were frequently falsified in order to draw maximum benefits from nursing allowances. This aspect is now profoundly proved.

Hitherto unknown was the multidimensional influence of gender on the selection of potential victims. Women in general were much more likely to be murdered in the euthanasia campaign: their working capacity did not suffice to protect them, as female labour was considered to be less valuable than male labour. Included in the files of female patients we find many descriptions and remarks increasing their risk for selection, and which were used for women only: they were described as bitchy or shrewish. Disturbed or unruly female patients, who did not conform to general expectations of women's behaviour, ran a markedly higher risk of being murdered.

International participation in the conference disclosed new information on the scope and the long-term effects of T4 activities in Poland, Slovenia, and the former Bohemia and Moravia. In an impressively matter-of-fact lecture, Witold Kulesza, President of the Commission on Crimes Committed against the Polish Population, as well as a senior public prosecutor and professor of criminal law, presented another aspect of the T4 campaign in Poland: from 1939 on, not only patients from mental institutions and hospitals had been murdered, but also large parts of the Polish intelligentsia were too. In his opinion, this chapter of Polish history is an argument against any legalisation efforts or slackening of the Polish laws concerning assisted suicide/medicide. The after-effects of this campaign are yet another tie between Poland and Germany.

Henry Friedlander, a former Brooklyn College Professor of Contemporary History born in Berlin in 1930, and detained in several concentration camps (including Auschwitz) during World War II, spoke on the difficulties faced by Jewish studies in accepting as a fact that the murder of the Jewish population was preceded by another murder: the organised killing of these patients, who were also victims of mass homicide. The conference clearly shows that it is still very pertinent to pay attention to the victims of the euthanasia patient murder campaign, as there are clearly references to today's discourse on assisted suicide. The inclusion of history seems to be indispensable in the discussion on medical ethics.

The colloquium programme can be found at www.klinikum.uni-heidelberg.de/fileadmin/pressestelle/pdf/programm_t4.pdf.

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Making Health Policy: Networks in research and policy after 1945

RICHARD BARNETT

This is, as Virginia Berridge points out in her preface, a most unusual collection. It is based on the work of the interdisciplinary 'Science Speaks To Policy' programme of the London School of Hygiene and Tropical Medicine history group, where all the authors collected in this volume have worked at some point in their careers. Each essay examines a particular aspect of network theory and its implications for the study of health policy in postwar Britain.

In the early 21st century it seems almost self-evident that health policy should, in Berridge's words, "be based on the best available evidence, research or science". But this is, as she shows in her introductory essay, an idea with a history, finding its roots in the changed relationship between medical research and government policy in the aftermath of World War II. She takes pains to point out that this is not a broad-brush history of 'science' or 'social science' and its relationship to policy making, but very specifically the history of evidence and policy in health and medicine. Berridge also provides a short discussion of what exactly a research policy network might consist of, what it might look like and how it might behave, drawing on the substantial historiography of network theory for this purpose.

The body of the book is divided into three themed sections: 'Making public health policy', 'Evidence and health services' and 'The media, science and policy'. The essays touch on many of the major themes in health policy since 1950: smoking; heart disease; alcoholism; drug abuse; the tension between cost-based and need-based provision of expensive treatments such as renal dialysis or intensive care; and the growing media presence of scientific and medical research. One obvious omission here is HIV/AIDS (though this is mentioned in passing by several authors), and a network-based analysis of medical and media constructions of the disease would have fitted well into the third section of the collection.

Following Berridge's lead, each author sets out to historicise their case study in health policy. Luc Berlivet's essay traces the transformation of epidemiology by Richard Doll and Bradford Hill's work on the relationship of lung cancer and tobacco in the 1950s and its role in shaping new discourses of public health conceptualised in terms of 'causation' and statistically generated 'risk factors'. Betsy Thom persuasively challenges the idea that governmental guidelines for alcohol intake have ever been based on clinically determined evidence. Sarah Mars shows that in the writing of the first official recommendations for the treatment of drug abusers in 1984, the personal experiences of an 'expert' panel with no supporting clinical evidence were deemed sufficient for determining good practice.

Perhaps the most compelling section is the third, written entirely by Kelly Loughlin. She argues that with the development of mass media from the 1940s and 1950s, public relations became a central part of scientific and medical research. This trend was, she claims, reflected in the ritualisation of media contact

in the form of the press conference, and culminated in the 1980s with the emergence of 'PR as policy', a McLuhan-esque blurring of message and media.

This is one of a new generation of interdisciplinary studies and as such may make uncomfortable reading for historians, seeking as it does to link historical studies closely and directly to an analysis of present-day health policy formation. The essays cannot help but raise the old question of whether network theory brings a consistently useful dimension to historical analysis. And it is frankly difficult to express an informed critical opinion on the book: there are so few similar texts with which a comparison could be made.

But Berridge's thesis – that the view of health policy formation as rational and progressive, supported and directed by authoritative scientific research, is flawed and must be discarded – is convincingly presented in this volume. To quote Thom, "in the hurly-burly of the policy game, science is the football – essential, but only a part of the bigger spectacle".

Berridge V (ed). Making Health Policy: Networks in research and policy after 1945. Clio Medica 75. Amsterdam, New York: Rodopi; 2005.

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The Origin of the Life of a Human Being: Conception and the female according to ancient Indian medical and sexological literature

SHALINI SHAH

Rahul Peter Das, in his magnum opus, proceeds to tell us about the origin of the life of a human being in ancient Indian ayurvedic and Kamashastriya literature. Among the questions he looks at, the important one is: 'What happens in a woman's body at the time of conception?' Thus women are, empirically speaking, centre stage in this voluminous book, though the same cannot be said in an analytical sense.

Das's foray into studying sexological literature stems from the fact that the focus of this work is the origin of life; to answer the question of how human beings come into existence, the physical fact of intercourse between the male and the female assumes utmost importance. Owing to this, even while eight chapters of this work deal with ayurvedic treatises such as the *Charaka Samhita* and *Susruta Samhita* (plus commentaries by Cakrapani Dutta and Dalhana), *Astangasamgraha* and *Madhavanidana*, one chapter deals with orgasm and ejaculation as elaborated in the sexological literature (*Kamasutra* and Yasodhara's commentary, *Ratirahasya*, *Nagarsarvasva*, *Ratiratnapradipika*, *Ratisastra* etc.).

Das states that his intention is to study how ancient Indians came to grips with the problem of the role of the female in conception. But his attempt at understanding this issue lacks critical insight. What he fails to appreciate is that the sources with which he is dealing are essentially gendered: ayurvedic texts are always addressed to the bhisaja or to the buddhiman, pandita, or bidvan (the physician, wise or learned man and the scholar – all masculine categories). Therefore, the nature of their queries and the solutions that they advance are framed within a gendered context.

While describing the female who reaches orgasm prior to her male partner, Das is mystified as to why it should be treated in the ayurvedic texts as a disorder. The answer to this lies in the fact that for the ayurvedic writers such a woman was seen as not being attentive/receptive to a man's semen due to her being lost in the ecstasy of sex. As such, her state was considered a disorder.

Das notes that for ayurvedic writers the procreative fluids of both the male and the female were considered important for conception. It follows that the orgasms of women too, must have been considered of paramount importance for begetting progeny. Das wonders how it is then that the subject of female orgasm is not discussed in greater detail in the medical texts – which, after all, contain detailed discussions on other matters relating to conception and embryology. He answers that the discussion on orgasm in ayurvedic texts was regarded as superfluous because it was to be found elsewhere. He then zeroes in upon the *Kamashastr*a as the source of such a discussion.

What Das is unable to appreciate here is that if female orgasm was something to be discussed in the *Kamashastra* alone, the same logic is not applied to male ejaculation, which should also have been discussed only in the sexological literature. But we see that ayurvedic writers do not apply the same standard to men and women. In the *Asntangasmgraha*, one whole branch of medicine, vrsacikitsa, deals exclusively with semen and its treatment as well as the treatment of the penis (sisna, mendra) that discharges it. While vajikarana or virilification therapy for men is prominently discussed, a woman's menopausal stage is completely ignored.

If ayurvedic texts prioritise male the secretion over the female one, the Kamashastriya texts are no exception. New investigations (including my own work and that of Kumkum Roy) have shown that the 'desire' that is privileged within this discourse is that of the male rather than the female. In both ayurveda and the *Kamashastra*, women are mainly the object (stri vrsyatamamata, say Caraka and Vagabhatta) and not the subject. Neither female desire nor orgasm is, therefore, of much consequence. Wherever female desire is asserted, it is marginalised (in the *Kamashastra*) or treated as a disorder (as in ayurveda).

The main body of this book has been augmented with several supplements on special problems of Indian medicine and sexology. Furthermore, at the end of the text there is a thorough appendix where select technical terms and medicines from ayurvedic texts are juxtaposed with those of the Greek and yunani traditions. This exhaustive and scholarly work will serve as a useful resource for research scholars for a long time to come.

Das RP. The Origin of the Life of a Human Being: Conception and the female according to ancient Indian medical and sexological literature. Delhi: Motilal Banarsidass; 2003.

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The Catalogue of Jyotisa Manuscripts in the Wellcome Library

HEERAMAN TIWARI

As with all his previous works on Sanskrit manuscripts, David Pingree (sadly, no longer with us) has given us yet another wonderful catalogue. Pingree spent almost his entire academic career searching for collections of Sanskrit manuscripts in various libraries around the world.

Through his labour of love, Pingree has greatly facilitated the task of the seeker of Sanskrit manuscripts by providing well-researched catalogues. In the world of indology, his name became synonymous with such works, although he also produced some pioneering research in the field of Vedic studies, particularly on Vedic language and mathematics. Pingree's passion for Sanskrit manuscripts began in the early 1960s, when he emerged fresh from Harvard University with a PhD in Sanskrit.

The present volume meticulously records the Sanskrit manuscripts housed in the Wellcome Library in London. Dominik Wujastyk, the resident Sanskrit scholar of the Wellcome Trust Centre for the History of Medicine at UCL, informs us in his foreword that the documents in this volume were collected during the 1920s from India and Nepal by Dr Piara Mall and were added to Sir Henry Wellcome's collection in London in the following decade. The businessman and philanthropist Sir Henry (1853–1936) had employed Mall to collect them from India, with the objective of preparing "an historical and scientific study of ancient Hindoo medicine". This mission took Mall to "Kashmir, Bikaner, Jodhpur, Jaipur, Ajmer, Bharatpur, Gwalior, Baroda, Bahalpur, Haidarabad, Mysore, Tanjore [and] Travancore".

In 1954, the famous Indian Sanskritist V Raghavan had looked at 3000 of these Sanskrit manuscripts in the Wellcome Library, which became very useful to Pingree when he set out to work on his catalogue in 1985. Pingree's labour of two decades has resulted in this lovely and most valuable volume. Pingree also acknowledges here the important effort of Wujastyk, who organised the manuscripts "in a rational way, assigning to each as it was 'identified' a shelf-mark", and prepared "handlists of the texts in many of these manuscripts". The documents recorded in this volume mostly belong to ancient Indian Jyotihsastra (astronomy, mathematics and astrology).

Scholars working in this field will find this volume singularly valuable, for all the manuscripts within have been systematically named and identified: a detailed introduction to the volume describes how this has been done. David Pingree has truly rendered a most significant service to indology in general and to manuscriptology in particular.

Pingree D. The Catalogue of Jyotisa Manuscripts in the Wellcome Library: Sanskrit astral and mathematical literature. Sir Henry Wellcome Asian Series 2. Leiden, Boston: Brill; 2004.

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Reproductive Health in India/ Old Potions, New Bottles

KAI KHIUN LIEW

For better or worse, the story of colonial medicine has generally been the familiar imposition of 'modern' Western medical regimes on previously timeless non-Western traditions. In turn, the scholarly assessments of this legacy are usually benchmarked along the extent of influence and control of the colonial state, or its specific public health institutions. Despite the critical insights generated, the historiographical directions of colonial medicine are still largely dependent on the perspectives of medical and public health officials taken from official records.

With the primacy given to the state, it becomes inevitable that the role of society becomes perceived as marginal in the grand tussle between tradition and modernity.

The various articles in *Reproductive Health in India*, edited by Sarah Hodges, and Kavita Sivaramakrishnan's *Old Potions, New Bottles*, seek to refocus the lens on the negotiations of non-state subjects with Western medical discourses. Deviating from the mainstream theories of the hegemonic and patriarchal natures of the increasingly medicalised maternal health institutions, the authors in *Reproductive Health in India* portray significantly more active players shaping medical discourses according to relatively fluid notions of ideals of progress and civilisation. Collectively, these accounts present an extrapolated social interest towards reproductive and maternal health beyond the government hospital and passive/oppressed women and children Indian patients. The population census, the positions of indigenous midwives, Western-trained Indian women doctors and their apparently unenlightened counterparts (like veiled Muslim women) became highly contested notions. Manifesting broader struggles in defining political agendas of reformists, nationalists and eugenicists, reproductive health issues were no longer confined to the individual. With the spectrum of debates from voluntary associations, European and Indian women, right up to Mahatma Gandhi himself, the control of childbirth became increasingly linked with the fate of Indian civilisation.

While these groups were trying to incorporate 'modern' ideas, the medical guilds or vaids in colonial Punjab were in the process of 'reinventing tradition' in response to the competition from what they saw as Western medicine. The consolidation of British rule in the region might have corresponded with the gradual disenfranchisement of royal physicians in the Punjabi courts. But the fortunes of these players were not representative of 'traditional' medicine in the territory. Instead, the rapid socioeconomic changes to the colony, particularly urbanisation and the spread of the printing press, empowered the status of the vaids. Where the government hospitals and clinics were in their infancy, these guilds catered to the increasing demands of the medical market, even to the extent of taking public health responsibilities in containing epidemic outbreaks. In the meantime, they sought to professionalise their practices through establishing officially sanctioned medical schools, setting up medical journals and advertising therapies in the vernacular press. In the process, *Old Potions, New Bottles* represents an important case study in revealing the growth of new traditions rather than the romanticised 'resistance' of apparently antiquarian crafts in the encounters with colonial medicine.

Both books not only open up new potentials for archival research, but also further sensitise the understanding of the sociocultural dynamics of medical discourses and interactions: interactions that took place outside the realms of the state.

Hodges S (ed.). Reproductive Health in India: History, politics, controversies. New Delhi: Orient Longman; 2006.

Sivaramakrishnan K. Old Potions, New Bottles: Recasting indigenous medicine in colonial Punjab, 1850–1945. New Delhi: Orient Longman; 2006.

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Themed lecture series

Histories of the Global Eradication of Smallpox

Senior managerial and field personnel involved in the smallpox eradication programme of the 1970s will present their own views of that historic campaign. By showcasing the participants' perspectives, this series will offer original insights into one of the greatest public health achievements of the 20th century as it unfolded across the globe.

All lectures take place at Wellcome Collection, 183 Euston Road, London NW1 2BE. Registration is not required.

- **Wednesday 25 April, 13.00–14.30**
  A Miracle Happened There: The West and central African smallpox eradication programme and its impact
  Dr Joel G Breman (Senior Scientific Advisor, Fogarty International Center, National Institutes of Health, USA)

- **Wednesday 2 May, 13.00–14.30**
  The Last Challenge: The Horn of Africa
  Dr Ciro A de Quadros (President and CEO, and Director of International Programs, Albert B Sabin Vaccine Institute, Washington, DC, USA)

- **Wednesday 30 May, 13.00–14.30**
  The Global Eradication of Smallpox: Historical perspectives and future prospects
  Professor Donald A Henderson (Professor of Medicine and Public Health, University of Pittsburgh; and Resident Scholar, Center for Biosecurity, University of Pittsburgh Medical Center, USA)

The series has been organised by Dr Sanjoy Bhattacharya.

Henry Wellcome's Library returns home

The Wellcome Library is returning to its historic home as part of Wellcome Collection on 16 April 2007. Popular author Sebastian Faulks will officially launch the new and vastly enhanced Library, which houses over 2.5 million items spanning 3000 years.

The refurbished Library accommodation will provide easy access to far more of its collections, an attractive and spacious Rare Materials Reading Room and Viewing Room, a state-of-the-art Conservation studio, and an E-Learning Room. The entire Library space of 23 000 square feet will be WiFi-enabled and the Library will be open six days a week.

The return to Henry Wellcome's intended location at 183 Euston Road comes at a significant time. The opening of Wellcome Collection will enable the Library's collections to be seen by the public in new ways, and at the same time the Library is about to embark on a programme of digitisation of the collections, to enable researchers to access them from anywhere in the world.

'Uncover' – a virtual library – will be unveiled in June. Uncover will allow browsers to explore the Library virtually – to create their own 'exhibition', go on a 'tour' of the collections, view items in detail, hear Library staff describe the significance of items, and send images to others.

The Wellcome Trust Medical Photographic Library will also relaunch as Wellcome Images. This is a digital image collection of about 200 000 images depicting medical and social history, as well as contemporary healthcare and biomedical science. Images will be available on demand in digital form, and where possible will be released under a Creative Commons licence for non-commercial use.

Right:
Specimens of digested bone, part of an experiment at St Thomas's Hospital, London, around 200 years ago – one of the many artefacts in the Wellcome Library's collections.