Jewel in a murky firmament

The Diamond Jubilee History of Occupational Health at the University of Manchester

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At the simplest level this is the story of an entity, that comprises some people, some work and some buildings. But it is more than a sum of its parts. What gives it enduring life are the people that have come to the department, what they have experienced and how they have taken that experience to apply and share much further afield. Nor is it possible to view that entity in isolation because its operation is so emphatically displaced. That is that it, the department, is located in an academic institution but what it seeks to study is very much ‘out there’ in a more real world. Thus the background contextual landscape is a complex one of work, workplaces, society, region and perceptions and how these factors change over time.

In the harsher, laughably graceless language of the present time, the ‘products or outputs’ of our department are two; education and research. Increasingly they are measured, sorted, graded, packaged and stamped in the pursuit of money and recognition. Clearly these reductions may be necessary, but can be deeply unattractive and if this is a ‘fall’ then it is perhaps fortunate that in this article we are concerned mainly with gentler, prelapsarian times.

Education

Taking the long view, what was not quite clear for a while in the department was who it should teach and how. We shall return to this. However, the long view is now matured and it has become apparent that the core role has fallen to dedicated, specialist postgraduate training in occupational hygiene and medicine. Year by year the department has trained the majority of UK medical specialist trainees and an influential minority (elite being a pejorative word) of hygienists and general health & safety specialists.

The fulcrum by which this pre-eminence was achieved was the inception of distance learning in the early 1980s. At the time of its introduction, this was an innovative, bold and risky move. For success it depended on two judgements. Firstly, the perception that the well-established, traditionally operated day-release or block teaching was likely to be supplanted, in terms of student preference, by such a radically different learning model. Secondly that the teaching mixture of written material, local tutor encounters and central ‘boluses’ of small blocks of didactic and experimental training could all be made to work singly and in harmony.

Court Reports from that period chart the maturation of the distance learning concept. Initial funding provided by the Leverhulme Trust underwrote what was described as a ‘pilot project’ during 1983–1984. It was reported that ‘the final phase of the project, the pilot…proved to be highly successful and the university agreed to accept initial, financial responsibility for the fee paying course…’. This boldness was instantly and amply rewarded with 24 students enrolling in October 1984 and 28 in April 1985.

Tim Lee, then professor, was well-placed to understand the threats and opportunities that existed at the time as he had played a prominent role in the establishment of the Faculty of Occupational Medicine and during much of this period acted as Academic Registrar. At grass roots level, the ‘distance’ that the disembodied nature of much of the learning entailed had to be bridged. This was effectively done by the Administrators of the Distance Learning Unit (DLU), initially by Ted Stephenson and then by Ailsa Donnelly and her team. The strong personal bonds and loyalties that exist amongst so many of the graduates and teachers of the course owe everything to those individual contacts—a judicious mixture of service, advice, encouragement, cajolery and occasional downright shameless flattery have served to forge ‘links that bind’.

As the DLU concept matured, new needs emerged. A dedicated hygiene strand was added to the core course in the 1990s and has also prospered. Similar pattern training was also offered for the Diploma in Occupational Medicine (D. Occ. Med) and, paradoxically, an ‘old style’ residential intensive revision course has been added.
The latter has a useful reputation for improving AFOM performance.

The predecessor of the AFOM was the Diploma in Industrial Health for which training began in Manchester round about 1960. Occupational hygiene MSc was started in October 1976. While attracting relatively smaller numbers, it preceded the ‘medical’ MSc by over a decade and prospered. Strands of this course, together with the transformed DIH/AFOM training gradually came together in the 1980s to give rise to the distance learning element while, at the same time the traditional courses, at Advanced Diploma or MSc level developed organically and survived into the 1990s.

Going back to the start, early teaching was remarkably disparate. In the first year, 1945–1946, a number of postgraduate courses were arranged many of which prospered and were repeated in later years. A few withered and died. But the most remarkable are those which began as one thing and ended up as something completely different.

Of this last category, the transformation of occupational health nursing is perhaps the easiest to understand. It is noted in the somewhat impersonal language of the time that in 1945–1946, the Extra-Mural Department held ‘one Sunday course for State Registered Nurses (now RNs) on Industrial Nursing’. Such training persisted and prospered until the early 1970s when it was transferred into dedicated specialist nursing functions. A similar timescale can be noted for the operation of a distinct medical undergraduate training commitment. This was gradually squeezed out as that teaching changed from ‘a bit of everything’ to the current core of skills and competencies.

Relationships

When Ronald Lane was appointed as the first professor of the department, the appointment was part-time. He was already an established physician, an established occupational physician and a prominent member of the Association of Industrial Medical Offices (AIMO), the predecessor of the SOM. The establishment of the department was strongly supported regionally by colleagues and industry. By these means, and their extension nationally and internationally, the unit has maintained something of an autonomous existence independent of the university.

Things were very different then. The department was established on the wave of post-war idealism, that swept (Real) Labour into power and established the NHS and the Welfare State. At the same time universities were more clear about their designated roles, less overtly in competition with each other and attendance was a minority and elite pastime. In this milieu, the department maintained a vigorous, active national and international presence and the visitors’ book (still in the department) reads like a roll call of Gods from mythic times.

The pre-eminence of the unit at its inception was thus attributable to a complex set of factors. At an individual level there was an intellectual vigour, rigorous open discussion and strong characters such as Lane and Schilling. The times were optimistic and funders like the Medical Research Council, Nuffield Fund, Cotton Growers charities, etc. were keen to see issues in occupational health being actively addressed. The British Empire still survived and the ‘Mother Country’ was still looked to as the likeliest source of wisdom to help develop postgraduate medical education in specialized areas and also to a lesser extent, from the war-torn European mainland. And of course there were huge disparate industries to study much illness in them.

The out reach teaching around the world on WHO, ILO Commissions, etc. was tough and intense—somewhat more so perhaps than modern conference attendance. Thus the stellar visitors’ lists and students from around the world. These gradually diminished over time as the Golden Age of British occupational medicine receded. Not because of anything negative but simply because everyone else caught up.

As well as international prominence in organizations such as ICOH and WHO, academic staff such as Keir Howard and Michael Flindt were active at a national level in the general and educational activities of SOM. Other staff, like Cintokai and Roseanne McNamee exerted their influence as examiners for professional examinations. We have already noted Lee’s pivotal role in the establishment of the UK faculty, its examinations and the training for them. These roles were maintained in her turn by Nicola Cherry and have been taken up anew by Raymond Agius.

Less comfortably, the department has had its dark times and the remedies meted out within the corporate environment of a university have not always been those that enthusiasts for the function of the department would have prescribed. Thus in 1956/1957, Lane records the ‘decision taken in 1955 by the University authorities to reduce the size and scope of the Department has now made itself felt to the full’. Research was reallocated, staff left. Lane’s words were characteristically to the point in explaining the impact of the expiry of Nuffield priming funds.

More recently, many of us have been witnesses to the interregnum between the retirement of Lee in 1987 and the arrival of Cherry in 1991. In this mini Dark Age, the department was sustained largely by the DLU and that embodiment of cheerful determination, Barbara Rigby. That the department survived was truly a triumph of hope over experience; that it has prospered since is an affirmation of the continued virtue of hoping not to
mention the sustained lobbying by influential colleagues like George Fletcher and Steve Deacon.

In terms of influence, different scientific issues catch the interest and mood of the times cyclically. As examples, particular high-flyers brought low with time have been nuclear energy and space research. By the same account, occupational health has gone through at least two cycles of favour during the existence of the Manchester unit. It is necessary to be realistic on such matters: occupational health is not sexy at present, environmental health is. As evidence for this may be cited regulatory funding and commitment at national governmental level.

However, as old doors close, new doors open. For the department, the new door that is opening is electronic. Manchester, as a university, is rated in the top three in the UK in respect of electronic outreach. To give some feel for this more generally, it is possible, for instance, to take a full undergraduate medical course from Cornell University freely from the appropriate website. More parochially the problem-based, situational syllabus for medical undergraduates at Manchester permits the electronic ‘bolting on’ of specialist teaching material which interested undergraduates can ‘browse’ in the mode of self-directed learning which the course now requires. Such an exercise has recently been completed with the input of most of the honorary lecturers of the department. Similar approaches to more specialist teaching would expand the scope of teaching, once more, extensively beyond national boundaries.

Research
Research does not simply happen, but is the outcome of complex enterprise and interactions. Historically identifiable factors include the more obvious, the social and political preoccupations of the time and that which will gain funding. But equally important are the personal interests and strengths of the teams and individuals. Latterly competitive and quantal output considerations have become overt and even predominant elements under the epithet ‘publish or be damned’.

The consequence of such disparate influences over time is a certain serendipity in what was actually done.

It is pleasing to be able to note that over its history, the department has eschewed some of the more extreme afectionations and correctness that can accompany research activity. By this I mean snobbishness about funding sources, the pursuit of ‘fashionable’ subjects and such like. Instead, the predominant and consistent attitude has been pragmatic; that of decent, quality, jobbing problem-solvers. As such, the guiding spirit has been that of practical service to the regional and national community.

When established in 1945, the department naturally took on the prior activities that Ronald Lane had been pursuing for a number of years. These centred around lead exposure in battery manufacture to which Lane took an innovative and interventional approach. Also connected to the department was Goldblatt, a medical toxicologist, whose laboratory studies on agents suspected of causing bladder cancer in the chemical industry complemented the epidemiological work of Case. Both of these subjects were at that time ‘big science’ in the sense of being important and urgent medico-social issues with discernible morbidity and mortality.

Lane’s commitment to research was unequivocal and in his report for 1948/1949, he asserted his manifesto thus, ‘The work of the Department of Occupational Health was “primarily” devoted to research. Five separate projects are in hand...’. The scope of these investigations was broad and illustrates the hallmark pragmatism that has already been remarked on. They were as follows:

- Cardiovascular disease among cotton operatives
- Byssinosis in the waste cotton industry
- Rheumatism in Leigh, Lancashire (focused on miners occupationally)
- Resettlement of the disabled
- Neurosis in factory workers

In terms of then predominant interests this was an excellent, broad portfolio. Additionally Lane had published in the British Journal of Industrial Medicine (BJIM), now Occupational and Environmental Medicine, on ‘the health of the lead worker’ and Goldblatt had published in the same journal on ‘vesical tumours induced by chemical compounds’. The department was up and going!

The cotton studies noted above marked the arrival in the unit of Richard Schilling whose work on that subject was to occupy a significant part of his life and to be of international importance. Another distinguished but more transient ‘new boy’ was Bob Logan who also became a professor at the London School of Hygiene and Tropical Medicine (LSHTM) and it is a pleasure to be able to record that his personal memories of that time, transmitted to this writer, are woven into this text and that on vignettes of the professors.

Along with the main, continuing body of work, other projects had a more finite beginning, middle and end. Among these, emphasizing the pioneering nature of the work and future importance, were organophosphate pesticides (1950), psychological adjustment to work (1952), cadmium (1954) and epidemiological methodology (1954). Research lines initiated during this period included studies of Raynaud’s phenomenon (1953), occupational allergies and antimony smelters (1955).
The retrenchment enacted by the University in 1955, that has been previously noted resulted in the transfer of much research 'to other departments and institutions'. Lane's public posture was one of stoicism. It is hard to imagine now such gratuitous magnanimity on the part of a University as the passing up of funded research implies, but such behaviour in the pursuit of some nebulous 'bigger picture' remains a not uncommon delusional pastime in academic circles.

The new era ushered in in 1957/1958 saw the appointment to the staff of two future professors, Tommy Scott and Tim Lee. Scott's background was in research on cancer of the bladder in chemical workers. Lee's initial but transient work was on vanadium poisoning in boiler cleaners (scalers) in power stations and this opening into the electrical industry was to broaden in later years into a steady flow of interesting work on electrical injuries which was to prove of great practical value. These benefits persist to the present day in the form of universally available 'Residual Current Devices' protective of cardiac shock effects. The research resulted in prize awards both in the UK and USA.

Lane retired in 1964 and, after nearly 20 years of operation of the department, Scott was appointed to the chair in his place again as part-time. Looking back to the late 1950s, the setback then experienced can be seen to have been relatively temporary. The lead work was again enhanced with both biochemical and epidemiological aspects being addressed. There was also a further foray into the lung morbidity associated with another exotic metal, antimony. At this time a more mundane but very 'bigger picture' remains a not uncommon delusional pastime in academic circles.

Under Scott, Atherley's work into the ascertainment of noise exposures and their effects on hearing expanded into a number of industries including textiles, metals and transport. This research laid much of the ground work for the initial Noise Regulations and the development of preventative strategies. Meanwhile Mike Molyneaux had continued one of the traditional strands of work of the unit by carrying out a prospective study of young workers. Gordon Atherley, who subsequently went to London and then Canada, came to do this latter work alongside Lee.

The pneumoconioses, had been seen as an interesting but fairly well researched area. However, Flindt's interests led him to a study a more dynamic entity, occupational asthma. Initially his work was with detergents (B. Subtilis), but was to extend to other agents such as papain and chloramines. His work with enzyme detergents was not wholly welcome by those who were the subject of it and for a while it was an uncomfortable cause célèbre. However, in putting an important disease entity 'on the map' there is no dispute at all.

Scott retired at the end of the academic year in 1971 having overseen an intensive period of research into a new recognizably modern occupational health spectrum involving the dynamic effects of physical agents and chemicals. He was succeeded by Tim Lee who had risen through the academic ranks and was well-placed to capitalize on the initiatives in situ. He was the first full timer.

It is useful to set out the research activities of the early 1970s and to compare them with the list of projects running in the late 1940s. They have changed markedly in their nature and with the range of innovative approaches applied to them:

- Physical agents—electric shock
- Epidemiology—oral cancer in textile workers - mortality in newspaper workers - skin cancer and occupation (case/control) - lead levels/poisoning indices
- Lung studies—aerosol deposition modelling - structure and function alterations—asbestos - pulmonary function standards - pharmacology of cotton dust particulates - occupational asthma

It is perhaps also useful to digress briefly to consider sources of funding which at this time were quite typical of the spread of support that the department had enjoyed. Much of the respiratory work on models/distribution was MRC funded. The Cotton Growers Association was a very durable supporter of byssinosis work and other industry sources were Pilkingtons, the Electricity Council and the Foundry Workers Union. Government departments were mostly notable by their consistent absence since the short flurry in the early years of the department.

These flows of funding and the work they generated continued into the 1980s. Additionally Lee recognized the increasing need to professionalize the occupational medicine provided by part-timers, mainly GPs and along with Ricky Marcus began to publish on the subject. Other new ventures embarked on in the early 1980s were factory lighting and isocyanate exposure. Also the solvent effects associated with the manufacture of tennis balls.

Also at this time Brian Stollery joined the department as a post-doctoral researcher and subsequently developed an extensive strand of behavioural and psychometric investigations addressing important and, even now, not fully resolved issues. These included memory and attention during solvent exposure, recovery, effects of...
electromagnetic fields, anaesthetic gases and low level lead exposure. And at around the same time, the statistical expertise of the department was enhanced by the recruitment of Roseanne McNamee, a link that has been maintained one way and another ever since. Her work too has a familiar range of ‘usual suspects’ including anaesthetist morbidity, miscarriages and VDU work, the healthy worker effect, chronic disease in ex-serviceman and solvent effects on the pancreas.

In 1987, at the end of the academic year, Lee retired and the department became the ‘Occupational Health Unit’ within the Department of Community Health. This was to be the first of a series of amalgamations and restructurings that were no doubt entirely rational in terms of the exigencies pressing upon the University and the positioning of the Medical School within it. The de facto effect to those more directly interested just in the work of the unit was that it had been devalued and had almost overnight disappeared from sight. Cintokai and McNamee continued some of their research work, but many staff left and the whole thing had something of the feel of an underground factory with only the Distance Learning Unit as a visible node (on the educational side).

This shuttlecock existence continued with Community Medicine being subsumed into the Department of Public Health and Epidemiology. However, a beneficial consequence of this was the establishment of a coherent identity for the unit as the ‘Centre for Occupational Health’. This title had its ironic element because the home of the Centre, the Stopford Building, was now grossly overcrowded and the most intensive research effort by many parties was in fact involved in the identification of vacant space and potentially vacant space. Never were the implications of research grants ending so carefully scrutinized and no innocent broom cupboard was left undisturbed as all went before the inquisitorial gaze of the Space Committee. In terms of getting on with the job, this chronic issue was not resolved until the Centre moved to its current home in the Humanities Building, which has a nice communal feel to it.

The long journey in semi-darkness resulted in intensive lobbying from within the occupational health specialities and other interested constituencies which eventually bore fruit with the appointment of Nicola Cherry to the chair in early 1991. At the same time Peter Hewitt and I were appointed into part-time roles and Gordon Parker and Gary Burgess became full time lecturers. And so gradually the department moved from survival to progress mode again.

Cherry’s background in psychology had led her to develop epidemiological interests in neurotoxicity, especially solvents, and it is this work which is the first recorded to her in the university’s reports. Her main early contribution to the functioning and confidence of the Centre was to bring her expertise of modern, complex statistical epidemiology to bear on work to hand. These capacities were most notably applied to a major study of ‘Gulf War Syndrome’ studying veterans of the first Gulf War (1992). The main thrust of the work was to test the hypothesis that there was a specific, discernible syndrome. This was disproved, but it was demonstrated that combat zone presence was associated with increased level of symptomatology in a general non-specific way across the board.

Of equal, if not greater, importance was the placement of the HSE-funded occupational disease ascertainment activities into the Centre (THOR, ODIN, SWORD, SOSMI, etc). This work, which continues to the present, charts the changing pattern of occupational disease in the UK from perhaps the most reliable source, specialist practitioners. This has resulted in a steady stream of specific papers, a reliable evidence-base for proportional disease frequency and, due to specific efforts to incorporate denominator data, a strengthening indicator of absolute and discrete occupational risks.

Hygiene work has been focussed on exposure assessment for epidemiological purposes, now a general staple role with considerable debate on the reliability of modelling. That carried out in the Centre focussed on foundry work, a long-standing connection. Other work of note has included managerial aspects of occupational health, especially by general practitioner part-timers and the investigation of cardiac mortality in shift-workers.

In 2001/2002, Cherry commenced a slow move to Canada and Raymond Agius was appointed to the chair. He brought with him a strong interest in explicitly environmental issues, especially lung disease that could be studied in analogous ways to occupational disease. This reflects a trend more generally observable, which is a consequence of social change, namely the rise of post-industrialization, blurring of the differentiation between the factory milieu and its more general environmental impact and the increase of employment within the social milieu (e.g. pub staff and catering workers).

Part of the innate challenge of research is that one can only do, at the time, what one can. The most absolute limit is of course funding, which almost wholly constrains what is actually researched. However, other constraints that impinge are practical and intellectual. Both are powerful in that methodology at any particular time has its technical limitations and the scientific mindset in its perceptions can be and often is astonishingly blinkered.

So, a test of the impact of (historical) research is the time taken to usefully return to it to yield new insights. We cannot do this systematically for all the preceding work described, but a nice example presents itself and must suffice. Thus, a recent Lane lecturer, Lauwerys has over the last 10–15 years, re-explored and advanced the understanding of biochemical, nephrotoxic effects of lead and cadmium that were explored by Lane in the 1950s.
This is a latent period of some 30 years and thus a significant marker of the foresight, impact and thoroughness of the original work.

Finally in this section on research, it is necessary to note the concomitants of that activity. These are the editorships, committee memberships and general input to the processes of decision and policy making. Here the unit has a most distinguished record. Lane, Lee and Schilling were outstanding editors of the BJIM. All the professors have played their part in national specialist educational developments. Internationally their impact has supported the development of occupational health services in a dozen countries, either through personal effort or through WHO consultancies, ILO and ICOH. Also much of the law in our field, such as the various lead regulations, bears the trademark ‘Made in Manchester’.

Conclusion

Much of what has passed is well within living memory, and so many who read it may shudder to see some perhaps longer part of their life’s work contained within a short paragraph or, maybe worse, not mentioned at all. However, as with the companion article to this history, that is overtly a set of vignettes of the Manchester professors, this article too may well omit particular episodes and events in vignette style. This necessity is a consequence of available space. The changes in work from a manufacturing to a service economy and in education from student teaching to lifelong education and validation for postgraduates have stimulated successful, sometimes, radical adaptations in the department, but have ensured its successful survival.

Right now, what we see here is the department’s successful survival over 60 years during which we have experienced a predominantly manufacturing economy give way to a mainly service economy. This has had profound effects on the nature of occupational health research and the skills to be drawn on to deliver it. Similarly, in education, the emphasis has moved from student to postgraduate teaching and now towards lifelong education and validation. The Department has adapted and responded to all these changes and influences. The one constant is the warmth and affection it enjoys in our specialty and that is indeed a rarity and one to be treasured!

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