

THE ORIGINS OF QUANTITATIVE AND CRITICAL EVALUATION OF MEDICAL PRACTICE

Sir,

The previous issue of the *Journal* contains an article by Sir Christopher Booth on 'Medical Atlanticism' which contains a wealth of important information, but one important error! Like other historians before him, Sir Christopher suggests that it was Pierre Louis, in Paris around 1835, 'who introduced the numerical method in medicine'. This suggestion originates from a preoccupation among medical historians writing during the 1970s with hospital medicine in Paris in the middle of the nineteenth century.

However, as has been made clear in The James Lind Library hosted by the College (www.jameslindlibrary.org) and in a book published by the College,² two generations before Louis' work in Paris it was clinical investigators in eighteenth century Britain, particularly Scotsmen and Edinburgh graduates, who pioneered the introduction of observation, quantification, and experimentation in medicine and surgery, both for nosography, and for comparative assessments of the effects of treatments, presenting the results of these comparisons in tables. These men were thus methodologically more advanced than Louis who felt unable to compare bloodletting with alternatives avoiding venesection, but rather compared patients bled early and copiously with others bled later and more modestly.³ Moreover, British physicians and surgeons were interconnected by provincial and London-based professional societies, journals, and books, and established the basis for a quantitative and critical approach to the evaluation of medical practice.^{3,4} Edinburgh needs to claim its proper place in this history, particularly in the journal of the city's College of Physicians!

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- 2 Tröhler U. *To improve the evidence of medicine: the 18th century British origins of a critical approach*. Edinburgh: Royal College of Physicians; 2000.
- 3 Morabia A. *Pierre-Charles-Alexandre Louis and the evaluation of bloodletting*. 2004. From the James Lind Library (www.jameslindlibrary.org) Accessed 24 April 2007.
- 4 Tröhler U. Quantifying experience and beating biases: a new culture in eighteenth-century British clinical medicine. In: Jorland G, Opinel A, Weisz G (editors). *Body counts. Medical quantification in historical and sociological perspective*. Montreal: McGill-Queens's University Press; 2005; 19–50.

Author's response

Sir,

Professor Ulrich Tröhler is absolutely right in emphasising that there were a significant number of individuals during the eighteenth century in Britain, many of them Edinburgh graduates, who used numerical methods in their studies. One has only to go back to the beginning of that century to find James Jurin's work for the Royal Society which used numeracy in establishing the value of the old technique of inoculation against smallpox – and that was a century before Pierre Louis. But what interested me in my studies of Atlanticism was who or what influenced American medicine. There were certainly Edinburgh men who did so at an individual level, for example John Haygarth of Chester (1740–1827),¹ who greatly influenced Benjamin Waterhouse in Boston, the so-called Jenner of America. But one cannot argue that it was Edinburgh medicine that introduced numeracy. More often American physicians, for example Benjamin Rush, clung to the theoretical precepts they had learnt at their *alma mater*. And although I may have overstated my case in claiming Louis as the pioneer of the numerical method, it was undoubtedly he whose influence stimulated the numerical method in America. And that was what my paper, however worded, intended to show.

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REFERENCE

- 1 C Booth. *John Haygarth (1740–1827)*. Philadelphia, US: The American Philosophical Society; 2005.

Response from U Tröhler

Sir,

First, a few names of men who achieved arithmetic observation in clinical medicine in the second half of the eighteenth century. Only a few will be known to you as most were attached to dispensaries (i.e. policlinics)(D), or provincial hospitals (town mentioned) or simple army/navy surgeons (A, NS). But this is the whole point: they were 'marginal men' as seen from the traditional London establishment of the Royal College of Physicians. Typically they were Scots (S), dissenters, trained by apprenticeship (Apr) and/or at Edinburgh University (ED). They included: Edward Alanson (Apr., Liverpool), Gilbert Blane (ED), John Clark (S) (Newcastle), James Currie (Liverpool), Thomas Fowler (ED), George Guthrie (NS), John Coakley Lettsom (D), (Sir) James McGrigor (NS), John Millar (S), (D), James Lind (Apr., ED, Haslar Naval Hospital), Robert Robertson (NS), John Thomson (ED), Charles White (S), (ED) (Manchester), William Withering (ED) (Stafford).

Sir Christopher is right in that Louis was more influential in America than these Scottish pioneers. This had to do with the medical environment in which he worked. Paris attracted dozens of American (and also some British) students in these years with its well organised, easily (and relatively cheaply) accessible hospital practice, famous lecturers etc. By comparison, London had not much to offer. Moreover, and specifically to the issue at stake, the arithmetic observationist clinicians were distributed all over Britain and not concentrated in the capital. This point is well worth making, for it shows the importance of socio-cultural factors in the process of innovation of new concepts and methods.

U Tröhler

SOLANACEAE IV: ATROPA BELLADONNA, DEADLY NIGHTSHADE

Sir,

I would like to thank the Editor for giving me the opportunity to respond to Professor Lee's interesting account of the Agutter case.¹

Although poisoning stories provide much fictional material for detective stories, the harsh reality can be a terrible experience ending in death or serious injury with long-term psychological and physical consequences. In 1994, my own family and other members of the public experienced the poisoning referred to in the article. It occurred within a typically criminal context – the use of the public as objects for evil intent, the planning, deception, use of cunning and complete indifference to any outcome. We were then drawn into the investigation, the preparation of the prosecution case, the trial and the inevitably intrusive press interest. The subsequent fallout of all this was a profound aversion to any further publicity or public comment, and a desire to move on.

One thing that prompted me to respond on this occasion was Professor Lee's comment to the effect that the Agutter case has become a *cause célèbre* on a par with that of Dr Crippen. If so, for historical reasons, it is essential to try and keep track of the facts and events as they unfolded.

On access to atropine

It was mentioned that access to atropine might have provided grounds for suspicion. Most hospital doctors have relatively easy access to atropine. It is present in medical and surgical wards, operating theatres and resuscitation trolleys. However, access was not available on the industrial scale that existed in or around Dr Agutter's laboratory. Two laboratory technicians from Napier University each gave independent evidence on the second day of the trial to the effect that crystalline atropine sulphate was available in a cupboard in 5 gram bottles (when full). One of these would

have provided the equivalent of more than 8,000 standard hospital ampoules of 0.6 mg atropine sulphate. There was a key to the cupboard but atropine sulphate solution was freely available in the laboratory fridge.

On the defence and the appeal

As the author mentions, one focus of the defence was to discredit the forensic evidence. The forensic team came under intense pressure concerning the 'chain of evidence' during cross-examination. This concerned two matters: firstly the labelling and decanting of bottles and samples of tonic water and secondly, bizarrely, and to Lord Morison's apparent impatience, the question of a missing piece of lemon that had disappeared from a sample in Mrs Agutter's glass in the six months between crime and trial.

Even without the forensic evidence, there seemed to have been a compelling case to answer. Mrs Agutter was in fact aware of something amiss when she was given her gin and tonic. The testimony of Agutter himself, and also that of a second witness, substantiated this fact. Mrs Agutter immediately commented that the gin and tonic was very 'strong'. In response, Agutter himself then also 'tasted' it. He then asked the second witness to do the same. Mrs Agutter and the second witness then rapidly became extremely ill. By contrast, it took two cycles of poisoning in my family before the penny eventually dropped. Other members of the public had no idea at the time of drinking their tonic water, or indeed later, as to how or why they were being poisoned. When Agutter commented to us that he knew the concentration threshold at which atropine could be tasted in tonic water, it aroused immediate suspicion.

It was asserted on appeal that it was only a circumstantial case. Paradoxically, much laboratory science is based on circumstantial evidence. Legally, successful criminal prosecutions often rely on circumstantial evidence – it would be impossible to convict a cunning poisoner in any other way.

Contrary to an impression that might be inadvertently given in the article, neither my family nor the other victims in the general public had any knowledge of, or acquaintance with, Agutter before the offence. Our interaction with him was entirely a consequence of his unwelcome approaches. However, his comments did form a vital element of the Crown Prosecution's case.

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- Legal reports, personal records and diaries of events between 1st August 1994 and 31st July 1995.