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Prosper Ménière
(1799–1862)

dismissed the 17% greater cell density at 24 h of NAP1/027 as a factor because it is out of proportion with the 1600% increase in toxin A and 2300% increase in toxin B production. Optical densities (ODs) were measured within the linear range—ie, between 0.1 and 0.5 OD after appropriate dilution of the culture sample. Moreover, in both culture media, there was no overlap in toxin yields between the two populations, however the distribution of the data is shown.

Finally, the PFGE-type-specific toxin comparisons proposed by Freeman and colleagues as an “optimum analysis of toxin production” instead of toxinotype comparisons does not address the hypothesis of our study. We compared the uniqueness of NAP1/027 relative to most other *C difficile* strains which are toxinotype 0. We compared multiple isolates of the NAP1/027 epidemic strain with various contemporary, non-epidemic strains, and all conditions were held constant. Toxinotype-specific comparisons are of great interest in studies of toxin production since toxinotyping detects variations in a region of the chromosome that carries three genes (including *tcdC*) involved in the regulation of toxin production. These variations probably explain why consistent and significant differences in toxin yields are seen in these two populations.

In-vitro batch culture studies are of great interest in understanding the virulence mechanisms of *C difficile*, but additional approaches are necessary to assess their effect in vivo.

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Ménière’s disease

With reference to the Eponym on Ménière’s disease (Dec 17, p 2137),¹ it is important to establish when the classic triad of deafness, tinnitus, and vertigo was first given Ménière’s name. The term Ménière’s disease was indeed used by Charcot in 1874, but also by Knapp² and Brunner³ in 1871 (and possibly Politzer⁴ in 1867). These authors should still be read today: their clinical descriptions and discussions were far better than those of Ménière himself, and clearly relevant to the modern understanding of this distressing disorder.

They described a clear distinction between irritation (eg, tinnitus) and paralysis (eg, deafness),² as well as symptoms unmentioned by Ménière, including: audiosensitivity, sometimes painful or disagreeable; diplacusis; abnormal sensations in the ear³ (closure, fullness, or pressure) shortly before the paroxysms (not to be confused with closure of the Eustachian tube); sympathetic arousal;² and obscuration of the visual field. In my experience, diplacusis, audiosensitivity, and fullness are more useful in detecting fluctuating endolymphatic hydrops or early Ménière’s disease than the classic triad.

Knapp also noted characteristic contraction of the range of audition (peaked audiogram) whereby patients were able to hear the middle octaves of a piano most distinctly, the lower ones less so, and the higher octaves least. To Knapp this was proof positive that the disease involved the cochlea, not just the semicircular canal as Ménière and aurists³ said, nor the acoustic nerve nor brain centres.

It was thought at the time,^{2,3} and probably still is, that intralabyrinthine pressure is high, but Knapp noted that vertigo in Greene’s classic 1869 case was relieved by middle ear inflation, which is more likely to raise than lower perilymph pressure. Careful review⁵ suggests that hydrops is due to low, not high, perilymph pressure (or to linked³ cerebrospinal fluid hypotension).

Otogenic musical hallucinations are nowadays usually attributed to deafness—ie, sensory deprivation. But Knapp saw a 6-year-old boy with meningitis who complained of music playing shortly before becoming totally deaf. For Knapp, this observation was proof that the subjective sensation was due to acoustic nerve excitation, not paralysis—a conclusion supported by a modern literature review.⁵

Knapp also used an early example of consecutive numbered referencing in his text, as later adopted by the Vancouver system. Most interesting is his comment introducing the numbered list at the end of his paper: “The papers marked with * have been read by me in the original, the others in extracts”. Had this system been implemented as well, the major type of scientific misconduct—failure to read primary sources, with error propagation and claim to false scholarship—could have been stopped. Perhaps *The Lancet* can lead the way.

I declare that I have no conflict of interest.

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Debating intelligent design

Your Editorial (Jan 7, p 1)¹ concisely describes and aptly comments on gaps in the evidence supporting Hwang Woo Suk’s published achievements in cloning. On the following page,² you appear to call for debate on Darwinism versus intelligent design. But, given your position that Darwinism is already

“clear cut”, and given the quoted poll indicating that most Americans do not share this view, the message that comes through is really a call for more effective preaching to support your position. The juxtaposition of the two Editorials is serendipitous because the link between evidence and truth is at issue in both.

I too was fed a steady diet of Darwinism through medical school and beyond, but did not question it until recently. Aside from the well established phenomenon of natural selection within species, I have found much of the evidence nearly as whimsical as the illustration accompanying the second Editorial. In fact, the historical trail of Darwin proponents is littered with disproved claims about missing links.³ Accordingly, I find your comparison of Darwin’s theory to Newton’s description of gravity astonishing.

But the implications of the theory are too important to be treated dismissively. For instance, if life truly is the result of random forces, conditions, and elements, where do we find the moral authority to govern our behaviour? Morality is linked to behaviour^{4,5} and behaviour to health.

The Lancet could go a long way towards fulfilling its resolution to engage the public by sponsoring a pro/con debate on Darwinism. Why not invite a distinguished proponent and opponent of Darwinism to update the case for and against in a page or two? If Darwinism clearly comes out the winner, it should be obvious. At that point, why would anyone need to bother with intelligent design?

I declare that I have no conflict of interest.

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Finding a vaccine for human papillomavirus

In Stephen Pincock’s Profile of Ian Frazer (Jan 7, p 21),¹ Frazer and his colleague Jian Zhou are presented as being the inventors of the human papillomavirus (HPV) virus-like particle (VLP) vaccine. However, Frazer and Zhou were not the only important contributors: much more work was required and done by other groups to bring the successful vaccine to fruition. As members of an independent group involved in the initial development of this vaccine, we wish to add some background information.

The HPV16 VLPs reported by Frazer and Zhou were of aberrant size and shape.² Frazer and Zhou also concluded that VLPs could not be made using the major capsid gene (L1) alone,² which is incorrect.^{3,4} Both the Merck and GlaxoSmithKline HPV vaccines are comprised of L1-only VLPs. Furthermore, Frazer and Zhou did not characterise the immunological properties of their non-denatured particles.² Others subsequently determined that the L1 used by Frazer and Zhou was a mutant and that particles containing this L1 did not induce neutralising antibodies.⁵

Modern inventions rely not just on the research of one person but on a vast number of scientists across the world working in collaboration to advance knowledge in a given area.

We are named on a European patent relating to the HPV cancer vaccine.

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Better health statistics: the Cuban experience

Abdallah Bchir and colleagues (Jan 21, p 190)¹ present an accurate description of the current gaps in health information systems in most countries. Although some progress has been seen, we agree that most middle-income and poor countries do not have the capacity to assess the performance of their health systems and few use reliable information for decision-making. In 2005, only 33% of all countries had complete data available and no data were available at all for more than 50% of African countries.²

It is necessary to confront the reality of societies in which a formal system of medical care is unavailable and the simplest health statistics such as deaths and births are not recorded.³ We propose that the best way to achieve better health statistics is through the long-term development of national health systems that cover the country’s entire population. Only through health systems focused on primary care and public health will accurate and meaningful health statistics be assured and sustained. An example of a large and well established national health system that produces timely and accurate health statistics is Cuba—a low-to-middle-income country with a long history of disease prevention and control.⁴ Since 1970, Cuba has made public annual data on