doi:10.1017/mdh.2018.70

Theodore M. Porter, *Genetics in the Madhouse: The Unknown History of Human Heredity* (Princeton: Princeton University Press, 2018), pp. 349, $35, hardback, ISBN: 9780691164540.

Genetics in the Madhouse offers a balanced, well researched account of the development of hereditary theories of mental illness. By the author's own admission, the book took longer to write than had been anticipated. Professor Porter's background as an expert in statistical history places him in a unique position. He invites the reader to appreciate the links between the development of data analysis techniques and the preponderance of hereditary theories of mental illness. The result of the author's research is an engrossing study of attitudes, culture and scientific endeavour.

Theodore M. Porter's work spans what could be considered as the late modern period of history (from the age of King George III up until the Second World War). These dates are important, as they incorporate the advent of medical statistics and culminate in the atrocities that were perpetrated by the Nazis in the name of eugenic theories of mental health. The book offers some unique insights into mental illness during this period. The myth of the barbaric Victorian asylum is quashed. Instead, we are introduced to a number of larger than life characters that are genuinely doing their best to get to the bottom of their patients' malaise. Treatments could include sitting a patient in a warm bath, whilst dropping cold water onto their head. Interestingly, some saw the 'hereditary type' of lunacy as amongst the most amenable to intervention.

The broad research that was undertaken yields some surprising discoveries. The Norwegian records, recorded by Dahl, reveal estimates that 1 in 500–600 people are clinically insane. This is far lower than modern estimates that 1 in 100 suffer from schizophrenia, similar rates for bipolar disorder, and the 'one in three' that are cited by some to have experienced depression. Porter's analysis shows that those that favoured the case study method over statistics, such as German doctor F.W. Hagen, tended to prefer behavioural explanations of lunacy over hereditary theories. In the nineteenth century these explanations included overwork, epilepsy, alcohol, grief and 'moral causes'. These explanations were often compiled into tables, such as Lunier's 1869 proposed *International Standard Table of Causes*.

The weakness of the statistical method is that those that find a relationship between two variables are often quick to make an assumption regarding causation, ignoring the possible influence of other factors. Few explanations were given by doctors as to *why* they thought that their patients were suffering from a hereditary condition. Again, statistical tables proved to be a useful tool for doctors looking to establish a link between familial relationships and mental illness. It was shown that certain types of familial relationships were more likely to pass on their condition to the patient. As the science of statistics developed in its complexity, theories such as Mendelian genetics and Pearson's correlation provided further justification to doctors for their presumptions regarding causality.

As the book develops, it becomes clear that the concept of *Anlagen* is important for understanding a disposition towards mental ill health. While this term originally denoted a disposition, during the early twentieth century the word came to refer to a genetic subtype. This underlined a shift in thinking towards biodeterminist accounts of human behaviour. Anybody that has studied psychology as a subject will be familiar with the names of Fisher and Pearson. Students may not be so familiar, however, with the role that, particularly, Fisher played in the development of the eugenics movement in Nazi Germany. The book illustrates that it was not only German scientists that seriously advocated a forced

sterilisation programme. These movements were often justified by complex calculations arising from novel concepts, such as Darwinian biology and Mendelian genetics.

A great strength of this book is the range of sources that were consulted during its research. The author draws on data from the US, Norway, Germany, France and the UK. This allows a unique, global perspective on attitudes towards mental health during this period. It also illustrates the difficulties of those attempting to draw together data from different sources. This new, globalised medicine seemed to present as many challenges as it solved. Porter does well to make sense of global dialogue and to consider the effects of conflicts on the battle against mental ill health.

Genetics in the Madhouse has the power to inspire, to captivate and to stimulate further research. Many that read this book may want to visit their local records office, to see how the trends that Professor Porter describes played out in their area. Others may be interested in the comparison between the late modern period and the contemporary era of psychiatry. There are now a whole range of treatments that were not available to Hagen, Lunier and contemporaries. This begs the question, therefore, of why recorded mental illness appears to have *increased* during the last 100 years. Perhaps there is still something that can be learned from the likes of Hagen with regard to understanding those that may be suffering from such conditions.

Nicholas P. Hatton
University of Worcester, UK

doi:10.1017/mdh.2018.71

Joanna Radin, *Life on Ice: A History of New Uses for Cold Blood* (Chicago: University of Chicago Press, 2017), pp. 288, $40.00, hardback, ISBN: 9780226417318.

Joanna Radin's *Life on Ice* is an exciting addition to the historiography of modern biology. It is an informative and meditative study of what happens, culturally and ethically, when enthusiastic scientists draw and freeze blood from people in communities far from the metropole, who are not principally their medical patients. The exigencies and opportunities of the Cold War, concerns about encroaching pollution, the risk of further nuclear war and an influential ideology of global health surveillance, embodied *inter alia* in the World Health Organization (WHO), focused these endeavours. More recently, the activism of descendants of the donors, most of whom the scientists held to be 'primitive' and hence literally embodying a time before modernity, has led to moves to repatriate the frozen samples. Radin demonstrates that the unique repositories carry meanings not only for science, but for the people whose recent forebears provided tens of thousands of samples.

The book's research material is the scientific and industrial literature, alongside archival documents, interviews with scientists and Radin's personal observations in research labs in the USA, where blood samples collected decades before are still under study. Superficially, *Life on Ice* could resemble a conventional history of science, in illustrating the energies of 'pioneers' who drove the science and technology of 'latent life'. Notable figures, such as the Belgian priest, Basile Luyet (the 'father of cryobiology'), and his collaborator, Sister Pierre Gehenio, Yale's John Rodman Paul and his work on 'serological epidemiology', Albert Damon, Carleton Gajdusek and James Neel, and their respective nautical ventures in the Amazon and Melanesia, advanced the physical infrastructure needed to preserve blood in the 'cold chain', as well as carrying out a project of salvage in the face of perceived 'new temporal horizons of risk'. These individuals established new institutions and projects, founded journals and sourced extensive funding from institutions, such as