

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.

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**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

the US military, the Atomic Energy Commission, the National Institutes of Health, and the National Science Foundation. Their work involved extracting samples that ‘could and did serve as resources for producing knowledge about race, infectious diseases, drug resistance, and inherited patterns of susceptibility and resistance’ (p 70). For readers seeking such stories of scientific and technological innovation, *Life on Ice* captivates the imagination with a wealth of research into tales of idealism and ambition.

Yet *Life on Ice* does much more. Radin frames the book within two contemporary ethical issues: the preface refers to the now well-known history of the HeLa stem cell line, derived from the cells of a cancer patient, African American Henrietta Lacks, without her knowledge; and the book ends with reflections on the sensibilities of contemporaries descended from people, the majority of them from indigenous cultures, who provided their blood with consent, but were unaware it would be stored for decades, did not approve its multiple uses and were not invested in the research ends to which it was, and continues to be, put. In some cases, too, these contemporaries identify the risk of racial profiling and challenges to land claims. Many of these people now want the samples returned for disposal in culturally sanctioned ways, seeing the storage of their forebears’ blood as an ‘incomplete form of death’ (p 167). Radin underscores the centrality of ethical reflection for the book, then, as ‘a response to the ghosts who haunt the archives of human biology’ (p xii). She does not aim to pass judgment on past or present scientists, so much as to tell their stories as one of many narratives about the different meanings of the frozen blood to different people. As she observes,

stockpiling blood serum from ecologically distinct groups facilitated the study of disease as the solution to a biological problem of adaptability rather than as a problem that would invite solutions to actively address the conditions in which people lived. It situated those who gave their blood not as members of dynamic and evolving communities but as frozen baselines, relics of the past. (p 85)

The book’s narrative framing and interpretative dynamism are informed by two key theorists: Michel Foucault and Bruno Latour. A Foucauldian historiographic approach emphasises the importance of analogous discourses in epistemic moments. This challenges the historian to identify the sources of the will to power, to ask what triggers change. Radin succeeds in identifying not only analogous activities (for example, post-war ‘prospecting’ for blood and searches in similar locales for oil and uranium), but points to motivation, as in the commercial value cattle breeders saw in knowledge gained about freezer technology from the biomedical field.

It is understandable that a Latourian theory that foregrounds the socially constitutive role of objects should now and then see objects as the active subjects in sentences. Radin writes: ‘In the twenty-first century, the freezer filled with biospecimens has emerged as a secular reliquary of latent life, an organic machine that produces biological and social innovations and, perhaps, even revelations through its abilities to preserve and reorient biological matter through time’ (p. 20). The idea of objects as actors is a fruitful way of talking about the capacities of the material, non-human world to refract and reshape social conditions. And one could perhaps argue that the life or even will attributed to the blood samples themselves by the donors’ descendants is proof of the agency of entities that are neither wholly animate nor inanimate. I still wonder, though, if the idea of an object’s agency as generative, for example, of social innovations, is not best left to serve as a device to create narrative that accounts for the unique cultural properties of material objects over time, perhaps stopping short of seeming to attribute active *will* to objects.

*Life on Ice* works on several fronts: it seeks to honour the ‘ghosts’ of the scientists whose labours led, for good or ill, to the accumulation of human tissue with potentially

life-enhancing properties understood in the Western medical sense, while honouring the donors and their descendants, who in some cases want to see the blood repatriated. As a work of history, it is underpinned by a constant reflection on the fabric of historical studies as a discipline, which is temporality itself; and it demonstrates that good historical narratives can be derived from the work of thinkers whose work is sometimes thinly emulated, rather than deeply imbibed, as it is here.

In its rich documentation and theoretical sophistication, *Life on Ice* recalls the work of scholars such as Susan Merrill Squier, Sarah Franklin and the late Lily E. Kay, as well as evoking the anthropological view of scientific practice of Latour and Woolgar in *Laboratory Life*. If you are yet to be persuaded that some of the most exciting academic writing and theoretically informed historical thinking to emerge in the past thirty years is that concerned with the modern biological sciences, then you need look no further than Joanna Radin's marvellous study of the history of frozen human blood.

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**Mariana Saad**, *Cabanis. Comprendre l'homme pour changer le monde* (Paris: Classiques Garnier, 2016), pp. 309, €37,00, hardback, ISBN: 9782406058038.

Pierre-Jean-George Cabanis (1757–1808), famous during his lifetime for being Mirabeau's physician, recounted in his *Journal de la maladie et de la mort de Mirabeau l'aîné* the details of the great orator's last illness and death between 28 March and 2 April 1791, including evidence of devastated Parisians weeping at the news. After Mirabeau, Cabanis continued to be involved in politics, hiding Condorcet when the philosopher faced the guillotine, and providing him with the poison that ultimately allowed him to take his own life. The third giant in Cabanis's life was Bonaparte. As a deputy in the Council of Five Hundred and a conspirator, Cabanis welcomed the coup of 18–19 Brumaire (9–10 November 1799) and proclaimed the new regime both to have saved the republic and to be altogether legitimate. With fellow members of the Auteuil salon of the widowed Madame Helvétius, Cabanis embraced Bonaparte and the new Constitution of the Year VIII. Mariana Saad's clearly written and elegant book about Cabanis is the first to do justice to the entire oeuvre of this medical, moral and political thinker. Although its focal point is the vast and pathbreaking *Rapports du physique et du moral de l'homme* (1802), it takes all of Cabanis' writings into account, dealing with the 'epistemological foundations of his thought' which directed his life and work (p. 20).

Cabanis considered medicine, politics, political economy and morals as a single science, derived from the truths of human nature and capable of influencing corrupt or inspiring moral behaviour through laws that expressed and promoted human wellbeing. In his 1790 pamphlet, *Observations sur les hôpitaux*, he condemned 'social inequalities' as being the product of 'bad laws' (p. 24). Cabanis was committed to reform; if laws were tied to the new science of manipulating human actions, the result would be peace and happiness. In 1795 Cabanis was involved in the creation of the *École normale*, the institution intended to put an end to the Revolution, as Dominique Joseph Garat put it (p. 27). The next year Cabanis presented three mémoires to the world, the *Considérations générales sur l'étude de l'homme, et sur les rapports de son organisation physique avec ses facultés intellectuelles et morales* in January, *Histoire physiologique des sensations* in July and *Suite de l'histoire physiologique des sensations* in August. In these texts, that were later to