

years of Marker's first work on the plant, rural workers were removing several dozen tons of it from the jungle every week, delivering it by boat, horse or on their backs to processing plants. By 1975 more than 100,000 *barbasco*-picking families were involved in the trade. This included men, women and children.

In focusing on the impact of *barbasco* production on rural Mexicans, Soto Laveaga shows that these people were not simply a unified or universally exploited group in the process. While payment for extraction of the plant remained very low and conditions for picking and delivery were highly strenuous and hazardous, a lucky picker could rise socially, becoming in his or her turn an employer of other pickers, buyer or processor. For some rural Mexicans, *barbasco* gave them a new sense of identity as they moved from the position of uninformed root gatherers to that of skilled experts upon whom the wider pharmaceutical industry greatly relied. Within a short space of time they became well versed in the conditions necessary for tracking and extracting high-yielding plants, the science behind the drying and purification of the root, and developed highly tuned skills for negotiating agreements with commercial companies.

Armed with this new power, some of these rural Mexicans, as Soto Laveaga points out, later became articulate political agitators for economic reform of the countryside. From 1974 they were supported in this effort by a populist Mexican government seizing *barbasco* as a national symbol to promote rural modernisation and Mexican pharmaceutical independence. Setting up a Mexican state-run company, Proquivemex, to oversee the *barbasco* trade and improve the lot of those helping to gather and process the root, this government effort, however, ultimately failed. In part this reflected the fact that by the 1970s the international steroid industry had already begun successfully to exploit alternative raw materials for steroidal production. Soto Laveaga's book is a powerful reminder of the complex local and

international relationships involved in the production of medicinal drugs and the intricate social, economic and political impact this can have on individuals' lives.

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Peter Atkins, *Liquid Materialities: A History of Milk, Science and the Law*, Critical Food Studies (Farnham: Ashgate, 2010), pp. xxii + 334, £65.00, hardback, ISBN: 978-0-7546-7921-9.

What can milk be other than the whitish, opaque and sweet liquid produced by women and female animals as the primary source of nutrition for their offspring? Certainly, we know that the exact components of this liquid vary by species, farming methods, age or nutrition, and that there exist vegetable liquids from soy, rice or almond called milk. One can observe that milk has the tendency to change over time, while for the purposes of consumption these material changes can be put into operation in numerous forms. We are also aware that the highly sensitive substance is not easy to store and transport, and therefore are used to the many hygienic treatments of milk, e.g. pasteurisation, as a preventive measure in the fight against pathogenic microorganisms. Yet, despite all restrictions and well-known technical operations, we tend to identify milk as one of the most natural foodstuffs on our table. Among the plethora of processed food products, milk and dairy products seem to have saved much of their naturalness.

However, there is nothing self-evident in the very nature of milk. Neither the material of milk nor its qualities are timeless, stable and unalterable. Our meanings of milk are instead the result of history; especially the question, why a particular food should be for whatever reason a healthy and desirable one, can be answered in very different ways. Today, the notion of nature fits better with our ideals of a

healthy food than the notion of manipulation and control, which resembles a mass-produced industrial product. Yet this is only one proposition. Quality cannot be taken for granted. The notion of the material quality of food has, in fact, been a long-standing issue of controversies and contests in economics. Such struggles are the starting point of Peter Atkins' fascinating study of the 'nature' of milk in British science, dairy industry and health politics during the nineteenth century.

After the linguistic and visual turns in cultural studies, it sometimes looks as if the material world operates as a last sign for the natural. 'Can we get our materialism back, please?' was the polemic phrase of Bruno Latour with which he commented on this tendency. Atkins, too, does not believe in the stability of the material world, yet, at the same time refuses any kind of radical constructionism. While a substance like milk, on close inspection, is fully in the human realm, the material never could be handled without restrictions. Atkins prefers to follow Andrew Pickering and Keith Guzik (eds), *Mangle in Practice* (Durham, NC: Duke University Press, 2008) as a theoretical framework referring to the 'dialectics of resistance and accommodation' (p. 53). Knowledge production is seen as 'muddling along towards understandings'; in the words of Atkins, science never knew the material qualities of milk, instead it was seeking the natural, and policing the real substance.

Thus, Atkins offers a history of the production of knowledge tools intended to perceive and explain the material nature of a bodily substance in order to transform this substance into a commercial product on increasing food markets. Instead of analysing the power of instruments, laboratories, firms and legal institutions – as classical history of science and technology would have done – Atkins concentrates on the mechanisms or, with reference to Foucault, the '*dispositifs*' that have generated the expertise and norms produced by these institutions. Many branches of research – for example, milk chemistry – ended up in analysing the composition and

properties of the fluid. Many technical procedures acted on and distributed the discursive space in which the meanings of the nature of milk were made. Atkins divides the experimental trials on milk into no less than ten distinct forms; likewise, the expertise, and the disagreements between experts.

All the scientific findings of the period under consideration are nothing but interpretations attributed to the materiality of the body. One could call it an experimental realism. This experimental realism no longer presented bodily materials in a personal, private or individual form, severed from other spheres of life, but as something universal, representing all individual milks. As such, milk became measurable, normative, standardisable. Although different bodies continued to give different substances, these became increasingly comparable in physical properties, ingredients, taste and quality. Yet speaking through the medium of lactometers, etc., scientists offered curious explanations of matter that created new images of milk. The practice of measuring produced in a laboratory was transmitted to the material world and amalgamated with the perceptions of earlier periods. This becomes very clear in relation to the leading themes of earlier periods. Milk adulteration, for instance, as old as the commercial milk trade, was no longer only defined by secret manipulations but also by the adulteration detection tests and their indicating devices. Hence, formulas or scientific notations relate not only to subsequent problems of standardising and homogenising material differences. If they are leaving the world of the laboratory, they become images of the ordinary materials belonging to everyday life and recognised by all. Atkins analyses this shift with respect to the legal procedures of the British food and drugs legislation, demonstrating that the quality of milk is closely related to the practice of common law. Scientific, technological, commercial, moral and, finally, legal influences are hidden behind 'a blanket of innocent whiteness' (p. 277).

Milk represents the emergence of a consensus of material ontologies, and it is the

work of the historian to map even some of the involved parties. Atkins does not try to sum things up. He is just describing particular historical persons, methods and events, while rethinking food history and doing a very empirical philosophy. He relates his findings on the material quality of milk to other texts from different fields (epistemology, history of science, history of food) and in so doing finds his own narrative. This is quite radical and thought provoking, arguing that the materiality of milk is not a given. Ontology is a quest of politics, and science is as multiple as reality in general.

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Anne Løkke, *Patienternes Rigshospital, 1757–2007* (Copenhagen: Gads Forlag, 2007), pp. 119, Kr 229.00, hardback, ISBN: 978-87-12-04219-8.

It is fascinating to consider that *Rigshospitalet* in Copenhagen, the major hospital in Denmark's capital, has hosted patients day and night for the past 250 years. It is perhaps even more interesting to realise that glimpses of the four million patients who have used this facility over the centuries still exist in the archives. This unique source material underpins the narrative of *Patienternes Rigshospital* in which the historian Anne Løkke tells the long and changing history of the hospital, combining an institutional view from above with a patients' view from below. The book gives a detailed and vivid picture of life at the institution and how medical knowledge, skills and technology transformed it from a hospital that primarily offered shelter, food and care in the eighteenth century to a 'factory' that produced effective cures in the twentieth century.

Founded in 1757 by King Frederik V, it was named initially the Royal Frederik's Hospital. At this time the poorhouses in Copenhagen were overcrowded and produced an increasing

number of disabled people who were a charge on the state finances. The main purpose of the new hospital was, therefore, to provide medical and surgical treatment to the poor with the aim of curing them; patients with chronic disorders were not admitted. A maternity hospital and a children's home adjoined the institution. The people of Copenhagen were impressed by the palace-like façade of the building and the fact that they now had a hospital that matched the best in Europe, not only at an architectural level but also in terms of facilities and care. It also seems likely that the three meals a day, clean beds, and quiet surroundings on offer would have been appreciated by those patients who came from the slums of Copenhagen.

At the core of Løkke's history lie the case studies of the patients. Løkke chooses a kind of snapshot structure through which she investigates patients admitted to the hospital on 1 April in 1797, 1897 and 1997. Through these histories the reader gets a very fine picture of how diseases and medical care changed over the centuries.

In 1797, a twenty-year-old bricklayer's apprentice probably had his life and livelihood saved when he was admitted to the hospital with an old wound on his hand that would not heal. Untreated wounds were potentially fatal and made wound care one of the main tasks in the surgical department, whereas operations were rare. At that time, seventy per cent of the patients were poor and entitled to a 'free place'. The food was of good quality and represented a major expense. In order to stop staff pilfering food, patients were put in charge of the supply. Every ward had scales, which the patients could use to check that the meal contained '125 grams of beef' at lunch or '8 grams of butter' for the bread at dinner. Everyone was made aware of the dietary regulations printed on a poster in the ward.

Although the hospital had ostensibly been set up for the poor, it also took in fee-paying patients who could pay for a number of services that included better food, birth overseen by the chief midwife, exemption from participation in teaching, a private ward