

## Book Reviews

BARBARA DUDEN, *The woman beneath the skin: a doctor's patients in eighteenth-century Germany*, transl. Thomas Dunlap, Cambridge, Mass., and London, Harvard University Press, 1991, pp. viii, 241, £19.95 (0-674-95403-3).

Readers of German will already be familiar with Barbara Duden's pathbreaking study of the female patients of an eighteenth-century provincial medical man of Saxony (it was published as *Geschichte unter der Haut: Ein Eisenacher Arzt und seine Patientinnen um 1730* in 1987). Thomas Dunlap's translation will ensure that this book reaches the wider audience it deserves. Duden has analysed an eight-volume work on the diseases of women compiled by Johannes Storch from his notebooks of twenty years' practice. She peels back the medical theories and learned references with which Storch filled his work to reveal what his female patients told him about their bodies.

And very startling bodies these were—at one point Duden remarks that Storch's work can be read as a decades-long attempt on his part to inscribe his understanding of the body upon the tales his patients tell. However, she resists the temptation to cast Storch as a Halle-trained Stahlian in opposition to his patients, and instead suggests that some of Storch's most important concepts were those he shared with them. The most striking aspect of these women's bodies is their fluidity in every sense. What characterizes women's bodies is flow, especially blood flow—body substances changed into each other, ailments moved around, the inside of the body was characterized by invisible but experienced flows. These extended beyond the body, both in space (external causes like dancing could alter them) and in time (like other early modern accounts of illness, these emphasized the logic of the life story rather than that of the body).

Nor did these women possess modern bounded bodies; Duden suggests that the modern highly-individuated person did not yet exist—and therefore neither did such a body. She links this unboundedness to forms of social organization, arguing that social relations extended to innermost flesh. On this point, a more nuanced argument which explicitly connected particular social forms to historical bodies would have been an asset.

One of Duden's most important discussions of Storch's casebooks concerns early modern constructions of gender. She shows that womanhood was not located in sex characteristics as we know them; there were no unequivocal signs of difference. What defined femaleness was periodic blood flow—men bled too, but not regularly. Nor, of course, given the fluidity of the body, did female blood flow automatically equate with menstruation; women bled or discharged other fluids from a variety of orifices. In sum, gender was a relative category. Such claims, of course, fit well with recent studies by Thomas Laqueur and Londa Schiebinger which address the construction of sexual difference. However, where the latter primarily use writings by socially-elite men, Duden shows us this system of sexual difference as it was lived by ordinary women.

Although this book is an outstanding achievement, it has to be said that it is frustratingly uneven. The third chapter is the best description I know of the day-to-day realities of early modern medical practice, accomplished through intermediaries and letters, subject to shifting patterns of patronage and reputation. However, the conclusion is extremely sketchy. For example, Duden writes, "The synthesis of the bourgeois body was accomplished only after its care was monopolized by medicine" (p. 184), but does not pursue the implications of this remark. Such quibbles aside, it is to be hoped that Harvard University Press publishes this book in paperback. Duden's chapter on "The Perception of the Body" is a superb way to persuade students that the body has a history. The book will be read with great interest by historians of medicine and by feminist scholars.

Mary E. Fissell, Johns Hopkins University

STUART S. BLUME, *Insight and industry: on the dynamics of technological change in medicine*, Inside Technology series, Cambridge, Mass., and London, MIT, 1992, pp. xii, 306, illus., £26.0 (0-262-02332-6).

*Insight and industry* looks at the competing and complementary factors which have influenced the development of four important methods of medical imaging. It is important both to the scientists working in these fields and to the infrastructure (hospital managers,

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industry and financial sponsors) supporting the developments to know why certain scientific efforts succeed and others wither. Blume chose to investigate this question for ultrasound, thermography, X-ray CT, and MRI. The book is not by a physical or medical scientist who has worked in these fields; the author displays a background in sociology and economics.

The central four chapters are Blume's view of the history of these four modalities, comprising his deductions from the secondary published literature and interviews and conversations with *some* of the pioneers of the subject. These are by and large accurate, if somewhat selective, accounts and make for easy reading. Blume should be congratulated for setting these histories in the context of the forces which drove the physical and medical science. There have been plenty of other histories of these subjects by scientists which have not presented so many interesting details.

However the book has some serious limitations which negate its credibility. Apart from a few passing references to radioisotope imaging, nuclear medicine is totally ignored. Nuclear medicine has been central to the diagnosis of cancer and has had an all-important influence on the development of other methods of medical imaging. Nowhere in this book is there mention of the influence of emission tomography, as developed by David Kuhl in the 1960s, on X-ray CT scanning, for example. Blume writes about the pioneering work of William Oldendorf, correctly noting that it was totally ignored in the early 1960s, but completely fails to find out why. Yet ten years on when the medical problems were identical, X-ray CT made giant strides and enjoyed immediate acceptability.

Early in the book, Blume tries to establish a foothold of interest in these issues for the non-specialist. He writes of removing the "privilege" of experts. Of course it is right to look at these scientific developments in terms of economic, social, industrial and political considerations but in so doing I suspect he ignores the prime reason why certain imaging methods progressed and others did not. This is simply that whether a medical imaging modality is useful is largely determined by the physics of the method in relation to the medical problem being investigated. For example Blume describes how thermal imaging simply fizzled out and wonders why. He even seems to think this has something to do with the failure of some scientists to find time to write up their work. The truth is that the poor sensitivity and specificity of thermal imaging in competition with X-ray mammography steered the field towards the latter.

When Blume examines CT scanning he completely overlooks its important use for planning and monitoring radiotherapy. This was a fundamentally important factor "driving" both head and body scanning throughout the 1970s and with the growth of 3D conformal radiotherapy CT scanning is indispensable. MRI is being seriously investigated for these purposes also, another overlooked area.

The book is rather dated. Most of the information gathering seems to have taken place many years ago with no effort to update interviews and look at how these modalities are faring in the 1990s. As well as radioisotope imaging, there are plenty of other imaging modalities such as applied potential tomography, magnetoencephalography, and diaphanography; why were these overlooked? The scientists working in these areas would be very interested in hearing Blume's analysis of their fields.

I found chapters 1 and 2 irritating. These were jargon ridden socioeconomic essays which promised answers which failed to emerge later on. Dozens of words and phrases were in inverted commas and their meanings were lost on me. I accept that may simply be a mismatch between my background and expectations and what I read, but I think this would apply to most physicists and medical doctors.

Tomography started with André Bocage, a French dermatologist. He was not a radiologist. Blume has tried to assess these four imaging modalities in terms of their acceptance by radiologists and this error, small though it may be, exemplifies many inaccuracies throughout the book.

In summary the idea underpinning this work was good. The central four chapters should be read very carefully. The questions did not all get answered.

S. Webb, Institute of Cancer Research,  
University of London and Royal Marsden Hospital