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draws on textbooks, lecture notes, syllabuses, and examination questions to tell us what was taught at various times. His monograph thus becomes a resource not only for the historian of physiology but also for the historian of medical education. (The serious reader should not overlook the mass of valuable detail contained in the annotations, many of which display an entertaining dry humour.) This monograph also reminds us (or informs those who never knew it) of the remarkable progress made by the mid-western state universities within decades of their founding. In 1881 (only five years after the founding of the Physiological Society and six years before the founding of the American Physiological Society), the faculty at Michigan identified Henry Sewall as Newell Martin's most promising student and brought him to the chair at Ann Arbor in 1882. This single act connected physiology in Ann Arbor with the new scientific medicine at Johns Hopkins and with the rebirth of physiology in progress at Cambridge and University College. It also brought to Michigan a man who had worked not only with Martin but also, even if only briefly, with Langley, with von Kries (in Ludwig's laboratory), and with Kühne. The choice, in 1889, of William Henry Howell as Sewall's successor was equally impressive. Davenport's book concludes with three chapters on Warren Lombard. The University of Michigan shared with the Rockefeller Institute for Medical Research the distinction (if that is what it was) of supplying many of the prototypes for the characters in *Arrowsmith*; Lombard was the prototype for Robertshaw. If anyone ever decides to make a systematic study of the lives and careers of those prototypes, Davenport's chapters on Lombard will prove very helpful. Quite apart from its own merits, Davenport's book, by appearing as a separate supplement may serve the valuable purpose of drawing attention to the many articles on the history of physiology to have appeared in *The Physiologist* in its first twenty-five years.

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CAROLE HABER, *Beyond sixty-five. The dilemma of old age in America's past*, Cambridge University Press, 1983, 8vo, pp. ix, 181, £17.50.

This is a very brief monograph (only 130 pages of text), in many ways no more than an extended essay. The first two chapters, comprising more than a third of the book, are devoted to a survey of the position of the aged in the American colonies and the United States in the nineteenth century. The author is very concerned to disabuse us of the notion that there was once some "golden age" of senescence in which the elderly were treated with veneration, subsequent to which there developed a generalized "social distaste for the elderly" (p. 5). Instead, she suggests, the experience of the elderly varied sharply, depending on whether or not they continued to control valued social resources. Over time, however, the proportion of the aged who managed to preserve some semblance of social position and authority steadily declined. Increasingly, judgements of uselessness and superfluousness came to be categorical rather than individual and functional; so that by the beginning of the twentieth century, "age alone became clear proof of a superannuated state" (p. 125).

All this seems sensible enough, if hardly startling or original. Indeed, this portion of the text relies heavily on the existing secondary literature, with only an occasional gesture in the direction of first-hand research. Fortunately, the subsequent material, particularly the two middle chapters on medical interpretations of old age, is of considerably greater interest.

Haber argues that "developments in the theory and practice of medicine had a significant effect upon the physician's perception and treatment of the elderly" (p. 47). Prior to the nineteenth century, the major preoccupation of those physicians who *did* write on old age was with unusual examples of longevity – something they attributed to the preservation of the limited store of energy and vitality granted each of us through following "the law of moderation in every aspect of life. . . . The more wisely people used the energy they had been given, the more likely they would be to attain a healthy and long-lived senescence" (p. 55). Gradually, however, physicians in the nineteenth century began "to view the elderly as a separate class of patients requiring specific age-related treatment for their characteristic ailments" (p. 57).

The process began, she claims, with the new approaches of the Paris school of medicine, and the associated reinterpretation of pathological changes in the human organism. Increasingly,

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old age was viewed "as a distinctive and irreversible segment of the life cycle" (p. 60). Moreover, "physicians had little control over this process. They could not stop the cell from evolving into its senile state, nor were they able to isolate the mechanism that controlled aging" (p. 63).

Increasingly influential on the Continent, this new conception of senescence was not adopted by Anglo-American medicine until the latter part of the century, and then with significant modifications. In the United States, vitalistic models of the ageing process continued to be widely influential, and the climacteric came to be viewed as marking the crucial transition, for both men and women, between middle age and senescence. The latter stage, in turn, was characterized by diseases "fundamentally different from illnesses common to other age groups", not least in their inevitable outcome – increasing disability and death (p. 73). The mental faculties, in particular, were destined to decay, as the senile brain "no longer possessed the plasticity necessary to formulate new patterns" (p. 76).

Such pessimistic conclusions helped to promote and justify a policy of isolating and institutionalizing the elderly; and to lend "scientific" support to the proposition that "the mere entrance into senescence [constituted] a sure and incontestable sign of uselessness" (p. 97). Ironically, this tendency to stigmatize and segregate the old was then further accentuated in the early twentieth century by the development of pensions for the elderly, which, when linked to mandatory, age-based retirement policies, completed the link between old age and inevitable dependency.

This is a persuasive and on the whole well-supported argument. But it could readily have been made in the space of a journal article. As it is, a skimpy text is padded by repetition and redundancy. I lost count of the number of "as we have seen" and "as has been noted"; an example, I fear, of the pernicious effects of the American "publish or perish" syndrome.

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GENEVIEVE MILLER (editor), *Letters of Edward Jenner and other documents concerning the history of vaccination*, Baltimore, Md., and London, Johns Hopkins University Press, 1983, 8vo, pp. xxix, 145, £12.75.

This collection of 102 letters and notes written by Edward Jenner between 1783 and the year of his death, 1823, was established by the late Baltimore physician Henry Barton Jacobs and given by him to the William H. Welch Medical Library at Johns Hopkins in 1932. With a few exceptions, these letters are previously unpublished and not included in LeFanu's *Bibliography of Edward Jenner*. The late Henry Sigerist initiated the project of arranging the letters for publication; the task has now been triumphantly completed by Dr Miller. Thoroughly at home in the period and the literature on smallpox prevention before and after Jenner's discovery in the eighteenth and nineteenth centuries on which she has written so lucidly in *The adoption of inoculation for smallpox in England and France*, Genevieve Miller has edited and annotated the letters with copious notes, no less welcome for being inevitably somewhat repetitive. Jenner's comments reveal his intense preoccupation with the furtherment of the vaccination cause; occasionally, this preoccupation is allowed to extend to his own reputation and the size of the reward he felt should be due to him from a government grateful for his life-saving discovery.

More endearing are the occasional sidelights thrown on his abiding interest in general natural history, especially as applied to his own gardening activities – the superiority of his white strawberries over his "only common Alpine" red ones, and the joy and wonder of harvesting a home-grown "Goosberry" tipping the scales at "five Drachms full weight". On the other hand, one does not have to be an anti-vivisectionist to be a little surprised and dismayed to find this country physician of gentle disposition suggesting to Charles Parry that there "must be a short cut from the Stomach to the Bladder. . . . What if we were to fill the Stomach of a Puppy with Mercury, first tying up the Intestine, and then give it a good squeeze?".

Of no less interest are the fifteen letters in the Appendix exchanged between contemporaries of Jenner and also relating to vaccination. There is a brief note from Joseph-Ignace Guillotin in