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instance, whose latest work *Dead Ringers* follows in detail the surgical experiments of increasingly mad twin gynaecologists, is a very disturbing meditation on the medical profession and its handling of the body, and deserves "careful study". But this checklist is too slackly conceived and written to suggest the real intellectual challenge of making the connections it presumes are desirable. What is needed is a series of sharply focused, fully informed and thoughtful pieces of criticism about the complex interrelation between an industry which is also an art and a science which is both a humane calling and a capitalist empire.

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PETER BRAIN, *Galen on bloodletting: a study of the origins, development and validity of his opinions, with a translation of the three works*, Cambridge University Press, 1986, pp. xiii, 189, \$39.50.

This is a curious and idiosyncratic book. Its organization and scholarly methodology should be greeted with some reservation, but at the same time the work is important and stimulating. It begins with a chapter summarizing the medical system of Galen, the Greek from Pergamon who rose to great influence in Rome and determined the course of Western medicine for a millenium and a half. The Galenic system was based on a purposive view of nature; carefully observed anatomy; a humoral physiology that explained health as balance or crasis and disease as dyscrasia; a particular concern with conditions called plethora; and beliefs in the value of cure by opposites and venesection.

The three works of Galen devoted to bloodletting are translated in the next chapters, 2, 3, and 4. They (using Brain's translated titles) are 'Galen's Book on Venesection against Erasistratus', an early (*ca.* AD 163) lecture, a rather disorganized attack on Erasistratus for his therapy of purgation and starvation rather than bloodletting; and 'Galen's Book on Venesection against the Erasistrateans in Rome', a work Brain dates *ca.* AD 175–80, which attacks both Erasistratus, who eschewed phlebotomy, and the Roman Erasistrateans, who misrepresented Erasistratus and should be condemned for using venesection excessively and with no rational basis. A third, less tendentious treatise, 'Galen's Book on Treatment by Venesection', from the 190s, addresses the value of phlebotomy for evacuation; two kinds of plethora and the putrefaction of humours; those cases where bloodletting is to be avoided; prophylactic phlebotomy; contraindications to the use of venesection (lack of strength being the most important); the revulsive use of the therapy; and appropriate veins for specific disorders.

Chapter 5 is on the relation and dating of the three works, chapter 6 argues that Galen's advocacy of bloodletting was considerably greater than is to be found in the Hippocratic Corpus, and chapter 7 summarizes Galen's views on phlebotomy. Chapter 8 analyses Galen's vascular anatomy and raises the question of inconsistency between this anatomy and his advocacy of revulsive bloodletting from the same side of the body as the ailment. The following chapter summarizes a fruitless search for precedents for this apparent contradiction and concludes that Galen's advocacy of revulsive therapy must derive not from his anatomy, but from his physiology, best understood through his model of the veins functioning as an irrigation system for the body.

A radical shift in focus occurs in chapter 10 where Brain addresses a highly technical series of modern haematological analyses of the argument that anaemia can be a factor in resistance to infection because it reduces the availability of iron to pathogenic organisms. The concluding chapter is devoted to speculations about Galen's personality and motives.

One perplexing feature about this book is its organization. I recommend that the non-specialist address chapters 1, 7, 5 and 11 in that order, to gain a grounding in Galen's system, his views on venesection, the relationship of his three works on the subject, and some aspects of his personality, before reading the three texts translated as chapters 2, 3 and 4. At that point, the interested reader can take up the two unrelated arguments concerning Galen's advocacy of bloodletting: an explanation of the reasons behind a revulsive treatment that seems

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to be at variance with Galenic vascular anatomy (chapters 6, 8, and 9); and a modern medical justification of Galen's use of venesection as an evacuant (chapter 10).

My second reservation about the volume focuses on the texts translated. In the cases of the first and third texts, Brain translates from C. G. Kühn's 1821–33 edition of the *opera* that is based on sixteenth- and seventeenth-century printed editions. In the cases of textual difficulties, Brain consulted some manuscripts (but not all those regarded as significant) for clarifications that are reflected in his translations, but the text upon which his translation is based can in no sense be regarded as reliable. The second translation, 'Galen's Book on Venesection against the Erasistrateans in Rome', is based on the 1970 dissertation edition of R. F. Kotrc with an exhaustive collation of an additional manuscript. This translation appears to be based on a critically defensible text, but the reader must be aware that the appearance of new editions of the early work against Erasistratus and the late work summarizing Galen's views on venesection—both desiderata—may render Brain's translations nugatory in part.

These two reservations are, I believe, significant ones, but I do not think that they can be taken as justification for ignoring this book. *Galen on bloodletting* deserves to be recommended by every teacher of the history of medicine as a sensitive and thought-provoking treatment of the theories of illness and therapy espoused by the most influential of ancient physicians.

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MARY KILBOURNE MATOSSIAN, *Poisons of the past: molds, epidemics, and history*, New Haven and London, Yale University Press, 1989, 8vo, pp. xiv, 190, illus., £18.00, \$25.00.

This is a slight (in every sense of the word) volume. The text manages to exceed 150 pages, but only just, by the liberal use of full-page illustrations and extensive presentation of well-known facts of the life cycle of *Claviceps purpurea* and of the symptoms which its ingestion may produce in man; plus the description of the much more recently observed effects of the trichothetenes, especially T-2 toxin, produced by species of the genus *Fusarium*. Evidently inspired by the latter work, this book is an historical projection of the explosive and fashionable interest in mycotoxins that followed the identification of aflatoxin in the early 1960s.

Rumination on possible effects in man of ergot alkaloids and of *Fusarium* toxins has led Matossian to an intriguing hypothesis. She has come to believe—and on the evidence of this book, one is tempted to say has become obsessed by her belief—that demographic shifts in populations, in Europe, east and west, and in North America, can be explained in terms of food poisoning by mycotoxins, directly and indirectly; indirectly because the mycotoxins act as "immunosuppressants" (that other fashionable concept of the 1980s), paving the way for epidemics of infectious diseases, from plague in the Middle Ages (in *rats* as well as in man) to streptococcal throat disease in New England in 1939.

If one is initially excited by this novel hypothesis, one's feelings tend to turn to disappointment and mild irritation as ideas, seemingly plucked out of thin air and only sketchily and selectively documented, are subjected to elaborate statistical treatment to support the author's tenets. It must be said in all fairness that in her preface Mary Matossian attempts a disclaimer: in somewhat purple prose she disarmingly acknowledges her own ignorance, aware that her "claims may seem excessive". Less disarming is her wishful thinking that she speaks "in the spirit of science", using "the logic that many scientists use" when she makes judgements based on "a little information about a lot of people". It is a comparison which would make the blood of most self-respecting scientists run cold, and make them reflect with Pope on the danger of shallow draughts from the Pierian spring.

Ergot poisoning, in one form or another, in different parts of the rye-growing world, and at different times and centuries, accounts for much of the book's substance. This is of course no new subject; nor are the putative connections with reported outbreaks of witchcraft, and Saint Anthony's fire and other neurological manifestations. New on the other hand is the author's