her trenchant comments to check my own speculations.

Since Dr Collins' methodology encourages precision and an exchange of information, I append a few corrections and suggestions. In general, her Latin is weak, and her quotations and, since her acquaintance with medieval Latin abbreviations appears limited, her transcriptions need checking. Often the plant name as given in the caption does not correspond to that on the plate. The author of the first major study of the Juliana Anicia codex in Vienna was not, as the unwise might suppose from her misunderstanding of the Latin, a Frenchman called De Premerstein, but a Germanic Anton Von Premerstein. A S Atiya also becomes Aiya. I missed a discussion of another papyrus herbal, already noticed by Johnson in 1913, that seems to predate by a generation Wellcome 5753. Details of this herbal, from Tebtunis, are most accessible in M H Marganne, *Inventaire analytique des papyrus grecs*, 1981, nos 176, 178–81. The Kansas City Museum also had on display in the early 1980s a few leaves from an illustrated Arabic herbal of Dioscorides (if my memory is right), from a private collection. The odd shaped palliasses in Laurenziana 73, 41 (fig. 44) have parallels in the Bologna Apollonius, and also in religious paintings of the death of the Virgin. Finally, a set of photographs of the Herten MS of Apuleius, destroyed in the last war, p. 191, still exists in the Welch Library at Johns Hopkins University, Baltimore.

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Bartholomaeus Eustachius, *A little treatise on the teeth. The first authoritative book on dentistry (1563)*, edited and introduced by David A Chernin and Gerald Shklar and published in facsimile with a translation from the Latin by Joan H Thomas, Canton, Science History Publications/USA for Dental Classics in Perspective, 1999, pp. x, 180, $59.95 (hardback 0-88135-259-4).

Bartholomaeus Eustachius is best known for his eponymous discovery of the tube connecting the ear and the throat. A professor at the Collegio della Sapienza in Rome, he made a number of close observations of human anatomy, especially of the throat and head, resulting in a series of drawings executed in 1552 that clearly established him as one of the foremost investigators of his day. Unfortunately for his posthumous reputation, however, his drawings were held in the Papal Library until 1714, when they were published together with notes by Clement XI's physician, Giovanni Maria Lancisi. The only contemporary publication by this superb anatomist was his little treatise on the teeth, *De dentibus*, printed in Venice in 1563. A modern translation is therefore to be welcomed. The resulting English is readable and conveys the main points clearly, although it is not aimed at a rendition that fully conveys the nuances of Eustachius' views.

Eustachius himself presents his findings forthrightly, and according to an arrangement in which he can discuss previous views about the teeth. He begins with arguments about the nature of teeth, and goes on to give a general description of their appearance, before turning to (among other topics) their size and number, location, articulation and arrangement, their roots, their material causes, their generation, the nature of the inner concavities of the teeth, their sensation, utility, unnatural formations, and decay. His knowledge is based on observations of the skeletons of "apes" (including at least one true ape), work with dogs, sheep and goats, and human dissection. His human dissections included ones on aborted and stillborn foetuses

and a two-month-old baby; other evidence comes from observations on adults. Perhaps his most important finding, from a modern point of view, is his demonstration (despite multiple difficulties) that in the hollows of teeth are blood vessels and nerves, helping to explain sensation in these hardened parts of the body. He preferred to confirm the observations of the ancients, such as Hippocrates' view that rudimentary teeth are already present in foetuses. Nevertheless, when the evidence required, Eustachius was prepared to contradict even the greatest of the ancients, although respectfully. He argued against Aristotle, for instance, that teeth do not have the ability to rebuild themselves; on the generation of teeth, he came to views at odds with Hippocrates and Aristotle, writing that "I reluctantly offer this conclusion to those great men, my distinguished teachers and predecessors" (p. 49).

Unfortunately, in their foreword the editors explain that Eustachius' respectful views of his learned predecessors were due to the compulsion of the Church: "Dissent from the teachings of Galen could lead to investigation by the Inquisition, with its implied threat of torture and execution" (p. vi). Not only is this terribly mistaken, it leads to the editors making misleading comparisons between Eustachius and people like Leonardo da Vinci, Gabriele Fallopio, and of course Vesalius, who were "bolder". Clearly Eustachius was not happy with fashionable put-downs of the ancients. "After all, everyone will realize that I have set myself the same goal, namely, to preserve the authority of the ancient writers, as long as it conforms to the truth, and to strengthen these writers' reputations" (unpaginated dedication). But as he explains further, he himself sometimes disagrees with other physicians and philosophers when they have erred, setting things right not to obtain personal glory but to stimulate others to make additional investigations. Perhaps this volume will provide a similar inspiration, despite the errors of the editors.

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Gayle Greene, *The woman who knew too much: Alice Stewart and the secrets of radiation*, Ann Arbor, University of Michigan Press, 1999, pp. x, 321, illus., £19.95 (hardback 0-472-11107-8).

This book is the story of Alice Stewart, the pioneer epidemiologist whose work on radiation hazards made her the bane of many radiologists, the nuclear industry, and its regulatory authorities. In 1956, at a time when doctors routinely X-rayed pregnant women, she published the first epidemiological study that suggested that a single prenatal diagnostic X-ray—far below what was regarded as safe at the time—doubled a child's risk of developing cancer. Yet her findings were dismissed for years by radiologists who continued to administer routine X-rays to pregnant women until at least the 1970s. Similarly, her finding that low doses of radiation in the US weapons industry were far more dangerous than official estimates suggested was dismissed by the nuclear industry and the international regulatory committees that set safety standards. As Gayle Greene notes, no one disputed that high doses of radiation were hazardous, but Stewart was one of a few scientists arguing for the dangers of low doses. Her work led her to suggest that the data on Japanese atomic bomb survivors, a key source of knowledge about radiation health effects, was not a good measure for predicting the health of nuclear workers, who were exposed in small increments, not in one major incident. Indeed, she claimed that studies of the bomb survivors—today managed by the joint US/Japanese