by Cambridge University Press. The work would have been better served had there been a co-authorship between the two men. An opportunity was lost to produce a better text.

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Liba Taub. *Ancient Meteorology* (London and New York: Routledge, 2003), pp. xiv+271 $96.95 (cloth) ISBN 0 415 16195 9; $31.95 (paper) ISBN 0 415 16196 7.

Meteorology is one of those fields of ancient Greco-Roman thought that did not constitute a single long-running and coherent discipline. A general study of ancient meteorology, if it is going to be useful, has to strike a compromise between present-day expectations of what the subject encompasses and the reality of the disparate ancient traditions and genres that have something in common with those expectations. One of the many merits of Liba Taub's book is that it sets the boundaries of its material flexibly enough to content a specialist historian while explaining those boundaries in terms clear enough for a beginner.

As in the other books that have so far appeared in Routledge's *Sciences of Antiquity* series, the "ancient" of the title means Greek and Roman. While regretting this usage (everyone understands "ancient philosophy" to mean Greco-Roman, but the case is very different in history of science), one has to commend Taub for dispensing with the patronizing tradition of prefixing a token chapter on "pre-Greek" meteorology. Her survey begins where it should, with Hesiod, and its last figure is, also appropriately, the sixth-century antiquarian John Lydus.

Taub divides her subject into two broad intellectual streams: one involved with prediction of weather, the other concerned with physical explanation of meteorological phenomena. The predictive stream, dealt with in the first non-introductory chapter (2), further bifurcates into forecasting on the assumption of an annual cycle of weather changes, and forecasting on the basis of intermittent "weather signs." These complementary methods were practiced by different classes of people, and gave rise to different genres of written documents. Thus on the one hand we have the *parapegma*, a list of weather changes correlated with first and last appearances of constellations and bright stars, and organized with reference to the solar year. Originally the parapegma was displayed as an inscription in a public place, with peg holes beside the daily entries to facilitate keeping track of the current date; but as early as the third century B.C. parapegmas were circulating as written documents on papyrus. The parapegmas were compiled from materials attributed mostly to "scientific" authorities (e.g. Meton, Eudoxus, Hipparchus) though one also finds entries ascribed to "the Egyptians" and even to one "Kalaneus of the Indians" ("otherwise unknown" according to Taub, p. 23, but this is certainly meant to be the notorious Indian gymnosophist Kalanos who accompanied Alexander's army and subsequently immolated himself). By way of contrast, the "weather signs" are ostensibly derived from anonymous "folk" sources, and although some of them involve watching heavenly bodies, the signs in question are always by nature nonperiodic and unpredictable.

Taub provides an accurate nontechnical description of these modes of weather prediction, and probes some of the numerous questions that the evidence for them gives rise to. Of course not everything can be fitted into half a chapter. For my part I would have wished to see some mention of the fact that a parapegma was inscribed on the exterior of the famous Antikythera gearwork device (which might cast some light on the purpose of that strange instrument), and more about the ways in which Ptolemy breaks with the earlier parapegmatist tradition, both in his *Phaseis* and in the *Tetrabiblos*.

In the remaining chapters, Taub turns to the variety of meteorological thought that aimed more at providing causes than at forecasting. As she points out, the surviving ancient literature specifically dedicated to explanatory meteorology is not abundant, being represented by Aristotle, Theophrastus, and Seneca. In addition we have a number of authors such as Lucretius and Pliny who incorporate discussions of meteorology in a broader framework, and a scattering of testimonia about the opinions of people whose writings are not extant, including inevitably the Presocratics. With such sources, it is usually best in an introductory survey to start with the major, self-standing texts and put off discussion of the "fragments" and any attempt at a synthetic chronological narrative until later. Taub starts off along the well-worn route that passes first through the Milesian Presocratics, though she is careful to stress that the reports we have "may say more about the writers who provided the testimonies and fragments than about the thinkers whose ideas they were said to represent" (p.73). This, although old hat to classicists, still needs to be pointed out to readers brought up on popular histories; but then why put the fables about Thales and company up front?

The treatment of Aristotle's *Meteorology* is sure-footed and representative of Taub's handling of the other major documents. Instead of giving us a simple doxographical review of Aristotle's views on the causes of each phenomenon, she structures this section around questions of method and presentation, for example the role of "reputable opinions" of predecessors and the employment of diagrams. While there is perhaps little in her analysis of the *Meteorology* that would surprise a specialist in ancient philosophy, it provides the lay audience to whom the book is directed with a useful introduction to some important aspects of Aristotelean method. In general Taub strikes a good balance in her treatment of the other authors between the technical meteorological contents and the issues of methodology and motivation.

The range of texts that Taub brings into play is not quite comprehensive. I would have expected to see more done with the Aristotelian *Problems* and the astrological literature, and the coverage of late antiquity (after Ptolemy) is patchy, with no mention at all of the several commentators on Aristotle's *Meteorology*. The writing is clear and engaging, though readers who know their way around ancient literature may find otiose the frequent biographical-dictionary explanations of who people such as Lucretius and Pliny the Elder were. The illustrations, mostly photographs of artifacts such as a Roman marble wind-rose and parts of the parapegma inscriptions from Miletus, are well-chosen and clear.

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