

Mountains and Shells

IN 1769 THE SCIENTIFIC WORLD was agog at the possibilities presented by a transit of Venus. Venus would pass directly in front of the sun's disk, and sightings taken from different points on the earth's surface would, by triangulation, allow astronomers to produce an estimate of the distance between the earth and sun and to help refine the dimensions of the whole solar system. Captain James Cook sailed to Tahiti on HMS *Endeavour* to observe the event. It could also be seen across the continent of North America, and as a dramatic demonstration of the new laws of cosmology derived by Copernicus, Kepler, and Newton, it gave special impetus to natural philosophy there.

The very first issue of the *Transactions of the American Philosophical Society* contained no fewer than nine papers by American observers of the 1769 transit. That volume also contained a paper with a recipe for making red currant wine. Similarly, when the American Academy of Arts and Sciences was founded in Boston by John Adams in 1780 (as a rival to Philadelphia's American Philosophical Society), the first issue of its *Memoirs* contained thirteen papers on astronomical subjects, including a solar eclipse and a transit of Mercury. There was also a letter discussing whether swallows, instead of flying south in winter, hibernated in mud at the bottom of ponds.¹

The juxtaposition of these essays in scholarly journals might, at first glance, seem anomalous; but it is not.

Science at any moment is a mixture: the old is being replaced by the new. Scientific knowledge is a *mélange* of long-held understandings, even folk wisdom, and new observational and experimental discoveries. At every