Sears, D.W. (1977) The origin of meteorites 1770-1850. *Meteoritics*, **12**, 361.

THE ORIGIN OF METEORITES 1770-1850

D.W. Sears, *Department of Metallurgy, University of Manchester, U.K.*

Prior to 1800 there was an almost universal belief that meteorites were produced by lightning. Between the publication of Chladni's book (1794) and 1803 there was a swing of opinion in support of the observation that they actually fell from the sky, associated by many with a belief in an extraterrestrial origin. The latter was most probably a consequence of the early chemical and physical work which revealed the similarity of meteorites to each other, regardless of country of fall, and their dissimilarity with local country rocks.

From 1802 to about 1840 the most widely accepted origin for meteorites was the Moon, but proponents of terrestrial degassing theories were also vocal. The belief that they were ejected from terrestrial volcanoes was largely abandoned following the chemical studies, and although Proust proposed that polar volcanoes would give the observed composition his idea received no support. Proof of an extraterrestrial origin was assumed to have been discovered in 1833 when Olmsted showed that the radiant of the Leonid meteor shower did not rotate with the earth.

Around 1840-1850 the hypothesis that meteorites came from the Moon gave way to the idea that they came from the Asteroid belt. This was primarily because it was then accepted that lunar volcanoes were inactive and, in any case, would not result in the high meteorite velocities observed. On the other hand, by 1850 a dozen or so asteroids were known and these were assumed to be a fragmented planet. It seemed natural to assume that a few smaller fragments could find their way to earth.