

# 19th century textbook illustrations



**WILLIAM B. JENSEN**

University of Wisconsin  
Madison, Wisconsin 53706

## Analysis of the Upper Atmosphere

The illustration shows the balloon ascent made on August 20, 1804, by the French chemist, Gay-Lussac, and the French physicist, Biot, to test, among other things, an earlier Russian claim that the earth's magnetic field decreased with altitude.<sup>1</sup> Their results indicated that it was constant. They also tested the atmosphere's chemical composition as a function of height and found it to be uniform. Gay-Lussac is at the left with the top hat, glasses, and air sample bottle.

Gay-Lussac later made a second flight alone, reaching an altitude of 7016 meters. In order to gain height he threw several items out of the balloon, including the old white kitchen chair he was sitting on. It landed near a peasant girl who was minding sheep. The local villagers and the priest, after much debate, finally decided the incident was a miracle. They remained, however, puzzled as to why God owned such shabby furniture.<sup>2</sup>

<sup>1</sup> Appleton, J. H., "Beginners' Hand-Book of Chemistry", Chau-tauqua Press, New York, 1888, p. 73.

<sup>2</sup> Oesper, R. E., "The Human Side of Scientists", University of Cincinnati, Cincinnati, Ohio, 1975, p. 78.

