sufficiently so that the sun has passed its zenith before significant amounts of NO_2 are created, photodissociation of NO_2 will be diminished and less ozone will accumulate on that date. At moderately high [HC]/[NO_x] ratios (usually greater than about 5 to 8:1), the greater availability of organic radicals means that all of these radicals are not consumed as rapidly in reactions with NO, and more reactions between the radicals and NO_2 are able to occur. Thus, the amount of ozone formed and accumulated begins to become limited by the availability of NO_x, and becomes less sensitive to additional organic precursors. At very high [HC]/[NO_x] ratios (greater than about 20 to 30:1), ozone cannot accumulate because either the ozone is consumed by reaction with hydrocarbons or radical-radical termination reactions occur which reduce oxygen atom and, hence, ultimate ozone concentration.

Identification of the nitrogen-containing products in atmospheric reactions has been under investigation for a number of years.[28-30] In general, the most important gaseous nitrogen-containing products in the NO_x-organic system are nitric acid and PAN. As noted, reactions of NO and NO_2 with free radicals produce, in addition to nitrous, nitric, and peroxynitric acids, a variety of organic nitrogen-containing species (Table 6-1). There currently exist important areas of uncertainty with regard to the formation of nitrogen-containing products in atmospheric reactions. The extent of