SCIENCE NEWS of the week
Date: 7-14-90
Page: 28

Pigments take their NO_x

Nitrogen oxides can chemically alter textile fibers, dyes and paints, but scientists have scant data on indoor NO_x levels or on which oxide species might damage artworks most. Now, preliminary data from an unpublished study indicate some pigments are vulnerable to "very very low" levels of nitric acid, says Lynn G. Salmon of the California Institute of Technology in Pasadena. Salmon observed that this pollutant — one of the more reactive NO_x species — not only causes fading but also turns one green pigment purple.

The pigment study follows an assay of nitric acid in five Los Angeles museums. In four museums, Salmon and her coworkers found that levels were quite low, at only a few percent of outdoor levels. The fifth, which opened its windows in summer, sometimes had indoor nitric acid concentrations approaching 40 percent of outdoor levels. However, even low indoor levels do not guarantee the safety of museum holdings, the researchers report in the July ENVIRONMENTAL SCIENCE AND TECHNOLOGY. They say an accumulation of nitric acid on surfaces — perhaps including artworks — appears to explain why one museum's indoor levels remained so low.