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ABSTRACTS

An Evaluation of Botanical Air Purification as an Indoor Formaldehyde Mitigation Measure. Thad Godish. Indoor Air Quality Research Laboratory, Ball State University, Muncie, Indiana 47306.—The ability of spider plants to remove formaldehyde from contaminated air was investigated under controlled laboratory chamber conditions. Formaldehyde levels were observed to be quantitatively reduced by the presence of spider plants in a chamber environment in which formaldehyde was continuously produced from particleboard materials. The greatest degree of formaldehyde reduction occurred when plants had been totally defoliated. These results do not support conclusions published previously that spider plants remove formaldehyde from contaminated air. These studies suggest that formaldehyde removal is effected by the soil environment rather than the foliage of spider plants.

The Impact of Residential Wood Combustion on Indoor Particulate Matter Levels. Randy Kirk and Thad Godish. Hayes Regional Arboretum, 801 Elks Road, Richmond, Indiana 47374, Indoor Air Quality Research Laboratory, Ball State University, Muncie, Indiana 47306.—Serious environmental costs have been associated with residential wood burning. This study concentrates on indoor air pollution, specifically particulate matter, as a result of wood burning in the home. Three private residences located at Hayes Regional Arboretum in Richmond, Indiana equipped with identical wood burning stoves and using a controlled wood supply, were monitored for a 48-day period, collected particulate matter, measuring wood weight burned, noting stove temperatures and timing open burn periods during refueling. Suspended particulate matter was captured on paper tape samplers and analyzed for changes in optical density to determine the coefficient of haze. The primary objective was to determine the significance of burn temperature and open burn time on particulate matter levels in the 3 houses.

A Self-extinguishing Safer Cigarette. Paul D. LaHue, 1137 Linden Drive, Bloomington, Indiana, 47401.—Research to develop a delivery system to treat cigarette tobacco with a safe inorganic fire-retardent has produced a self-extinguishing cigarette. The process and invention thereof pertains generally to the manufacturing of cigarettes by presently used cigarette-making machines. Burning cigarettes can and do start fires. Inhaling of cigarette smoke is detrimental to the health of smokers and non-smokers

alike. A delivery system attached to the cigarette-maker treats the tobacco particles, preventing a cigarette from burning beyond a determined butt length. The delivery system and treatment is controlled by the cigarette-maker's computer and synchronized to the speed of the cigarette production. This research can well result in a cigarette that will greatly reduce the fire hazards and also the health hazards of cigarette smoking.

Rain and Dew as Urban Acid Deposition Scavengers. Robert A. Pribush, Bradley H. Carter, Jennifer L. Waugh and Kimberly A. Bridges, Department of Chemistry and the Holcomb Research Institute, Butler University, Indianapolis, Indiana 46208.—For the past two years, wet and dry deposition samples have been collected at the Butler University Environmental Preserve (BUEP) in Indianapolis and the samples analyzed according to protocols adapted from the National Atmospheric Deposition Program (NADP). Monthly, seasonal, and annual comparisons of data from the BUEP, an urban site, and the NADP, a network of exclusively rural sites are being made to ascertain the possibility of using rainfall and/or dry-deposition data as diagnostic tools for local influences on air quality.

The use of dew as a scavenging agent will also be discussed. Preliminary analysis of recent dew collections show that dew is significantly different from rainfall or fog collected at the BUEP in the concentrations and types of major ions routinely present in these samples, particularly with respect to those species which have an influence on deposition acidity. Comparisons of dew data from the BUEP with data from studies in Pennsylvania and Michigan indicate that dew composition is considerably more site specific than rainfall composition.

Detection and Determination of Chemical Constituents in Water. Joseph R. Siefker and Stephen K. Moore, Department of Chemistry, Indiana State University, Terre Haute, Indiana 47809.—Chemical assays were made on selected samples of water taken from the Wabash River at Terre Haute and the tap in a chemistry laboratory at Indiana State University. Appropriate procedures were used to determine calcium, chloride, copper, dissolved oxygen, hardness, pH, phosphate, solids, specific conductance, sulfate, and zinc.