

CHEMICAL HAZARDS

- 348 Therapeutic Applications of Oxygen at Two Atmospheres Pressure. G. Smith
Diseases of Chest 45, 40 (Jan. 1964).

More oxygen dissolves in the blood and tissue fluids at an increased tension by allowing the patient to breathe oxygen through a mask while being nursed in a compressed air chamber. Since this determines the speed of transfer of this gas to the tissues, this technique should be valuable in the treatment of anoxic states both generalized and localized to a limb or organ. Using two atmospheres absolute of hyperbaric oxygenation, carbon monoxide, barbiturate poisoning, and the respiratory distress syndrome of the new born have been treated. The technique appreciably lengthens the time of "safe" total circulatory arrest at moderate hypothermia. In more localized ischemic conditions, hyperbaric oxygenation has been employed to maintain cortical activity in coronary arterial occlusion, and in traumatic ischemia of limbs.

-- J. Am. Med. Assn. References & Reviews

- 349 Contact Reactivity to Carcinogenic Polycyclic Hydrocarbons.
E.J. Old, B. Benacerraf, and E. Carswell. Nature 198, 1215 (1963).

The chemical carcinogens methylcholanthrene, benzpyrene and 9, 10-dimethylbenzanthracene can induce a high degree of contact hypersensitivity in guinea pigs when injected in Freund's adjuvant. The noncarcinogenic hydrocarbons, anthracene and phenanthrene, were inactive in the same system. Mice could not be sensitized to any of the carcinogens. The species differences are emphasized, especially since mice are highly susceptible and guinea pigs are generally resistant to the carcinogenic action of these chemicals. Man behaves as the guinea pig; he is relatively easily sensitized to many allergens but basically resists experimental chemical carcinogenesis. A reassessment of the use of mice and rats for carcinogen screening may be required. Perhaps guinea pigs should be used to determine the carcinogenic potency of dyes, additives, etc., earmarked for wide human use.

-- J. Occ. Med. Absts.

- 350 Atmospheric Fluoride Contamination in the Pottery Industry. S.G. Luxon.
Ann. Occ. Hyg. (London) 6, 127-130 (July, 1963).

This interesting paper describes experiment done during a health survey of the pottery industry. The etching of window glass near muffle type kilns indicated the presence of Fluorine compounds, and preliminary experiments showed that these were not gaseous. Thermal precipitator samples revealed that the air contained particles of median size 0.1 micron, and almost all below 0.4 micron, which appeared to consist of ammonium fluosilicates. The author outlines the way in which the fluosilicates are probably formed: when the borates are present in the glaze, ammonium fluoborates are also produced. Samples taken at various positions in the kiln workroom showed that the concentration of particles increased rapidly with height, the increase being attributed to the fact that Flue gases can escape from the kiln vent and may contain 70 mg./cu.m. of fluosilicates. The author suggests that the concentration of fluosilicates in the workroom atmosphere could be reduced by improving the ventilation of the kiln or, preferably, by replacing the present day materials by materials containing little or no fluorine, and states that this type of replacement is already taking place.

-- Bull. Hyg.

- 351 Radiomimetic Toxicity of Ozonized Air. R. Brinkman. Lancet 1, 133, (Jan. 18, 1964).

Though acute and subacute toxic effects of ozone are recognized, little is known about prolonged exposure to low concentrations (0.1 ppm). The increasing use of "fresh air" ozonizers and other sources of ozone brings up the question of their radiomimetic effects. Evidence is given, for rats, rabbits, and for man that this exposure leads to traceable effects, going deeper than damage to airways. Pairs of mice, exposed to 0.1 or 0.2 ppm of ozone for 5 hours daily were not visibly effected, but the neonatal mortality of their young was increased about 5 times. This is a warning against radiomimetic damage of "hygienic" ozone application.

-- J. Am. Med. Assn. References & Reviews