

CHEMICAL HAZARDS

- 41 Fish Poisonings—Their Diagnosis, Pharmacology, and Treatment. B.W. Halstead.
Clin. Pharmacol. Therap. 5, 615-627 (Sept.-Oct. 1964).

The general subject of fish poisonings is reviewed. Fish poisonings concern both oral and parenteral toxins. Four general types of fish poisonings are recognized: ichthyosarcotoxins, of which there are at least 9 kinds; ichthyotoxism; ichthyohemotism; and ichthyocanthotoxism. The pharmacology and chemistry of fish poisons are discussed, but most of them have not been characterized. Treatment for the most part is symptomatic.

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

- 42 Safety of Petroleum Waxes. A.J. Turchetti. Reprint from September, 1964 issue of Modern Packaging, 4 pp. (See IHD Abst. 638, July 1963).

Petroleum waxes for use in food packaging and other food applications have been found safe providing they meet the standards set forth in a Wax Order published in the Federal Register of July 8, 1964. In the opinion of the American Petroleum Institute, this clears all petroleum waxes which have been used in food packaging. 1. Thirty-six samples of petroleum wax representative of industry production were analyzed for polycyclic aromatic hydrocarbons. Eight samples contained identifiable members of this chemical group. No known carcinogens were found. The highest concentration of polycyclic hydrocarbon found was 0.64 part per million. No correlation was observed between polycyclic aromatic hydrocarbon content and any physical characteristic of the waxes including the crystalline form. 2. Five of the above waxes tested by feeding in rats at a 10% level in the diet for a period of two years (the approximate life span of the species), following which the rats were observed until their death. No carcinogenic or toxic effect was detected. 3. Five petroleum waxes in benzene solution were tested by repeated skin applications to mice and rabbits. In addition, one of the waxes was fractionated into aromatic and non-aromatic components which were applied separately to mice, also by repeated skin applications. Controls were painted with plain solvent or not at all. No carcinogenic effect was detected. 4. Five petroleum waxes were tested in mice by subcutaneous implantations, although it is recognized that tumors will develop around chemically inert materials from the physical presence of these materials in disk form. Tumors did develop around waxes in disk form when these waxes had melting points above body temperature. Similar tumors also formed around implants of Teflon and glass. No incidence of tumor formation was associated with implants of the same high-boiling-point wax in powdered form, or of waxes with melting points which allowed them to soften at body temperature. With questions of medical safety settled, wax makers are moving forward rapidly to apply waxes and wax compounds containing a variety of additives to the manufacture of improved protective packages of many kinds. New coatings for paper and paperboard are being developed which are heat sealable, outstanding in gloss and scuff resistant, as well as flexible, moistureproof and greaseproof. New laminating waxes are available for use with a variety of sheet materials to make barrier packages that protect over a wide range of temperature and other conditions.

-- Cond. from Reprint of Modern Packaging, September, 1964

- 43 Some Effects of Atmospheric Fluoride on Plant Metabolism. D.C. McCune, et al.
J. Air Poll. Control Assn. 14, 465-468 (Nov. 1964).

Leaves of Tendergreen bean plants exposed to atmospheric fluoride concentrations in the range 1.7 to 7.6 micrograms/cu.m. showed increased levels of enolase and catalase activity and decreased levels of pyruvate and alpha-ketoglutarate. Phosphoenolpyruvate carboxylase activity and oxalacetate were not affected. The leaves of Milo maize plants exposed to 5.0 micrograms fluoride/cu.m. showed increased levels of enolase and pyruvate kinase activity and a decreased level of pyruvate. Oxalacetate and alpha-ketoglutarate levels were not affected. Catalase activity was increased, then decreased by hydrogen fluoride fumigation. The changes induced by hydrogen fluoride were greatest 6 to 10 days after the start of fumigation and disappeared or decreased in magnitude during the post-fumigation period.

-- Authors' abst.