

- 174 Rapid Determination of Blood Cholinesterase Activity. J.H. Holmes and Lucy Jankowsky. Arch. Environmental Health 13, 564-569 (Nov. 1966).

Two rapid methods for measurement of plasma cholinesterase activity, the Acholest test paper and the bromothymol blue test kit, were investigated in relation to their effectiveness in diagnosis of organophosphorus insecticide exposure. Both methods provided reasonable correlation with measurements of the plasma cholinesterase activity by the Michel method, and proved of diagnostic value for 117 patients with suspected exposure to the organophosphorus insecticides. The Ach test gave more consistent results (with two exceptions) and a better quantitative correlation with the Michel measurements. The tests did not correlate well with changes in RBC cholinesterase activity (Michel method) and thus would have limitations in atypical toxicity problems. While tests described are diagnostically effective, there is still a need for development of a more definitive test for use in small hospitals in regions where extensive spraying operations are in progress. There are 13 references.

-- Authors' summary

- 175 Subacute Oral Toxicity of a Biodegradable Linear Alkylbenzene Sulfonate. J.H. Kay, F.E. Ko and J.C. Calandra. Toxicol. & Appl. Pharmacol. 7, 812 (Nov. 1965).

A linear, biodegradable sodium dodecylbenzene sulfonate was fed to rats at dietary levels of 0.02%, 0.1%, and 0.5% for 90 days. No adverse effects were found on the following parameters: growth, food consumption, food utilization, survival, hematologic values, urinary analytical values, organ weights, and organ/body weight ratios. There were no gross or microscopic tissue changes attributable to ingestion of the test material. The study was conducted to determine any toxicologic differences between this type of molecule and the non-linear (ABS) type.

-- J. Occ. Med. Absts.

- 176 Discussion of the Interpretation of Threshold Limit Values. J. Novak and V. Vasak. Am. Ind. Hyg. Assn. J. 27, 555-558 (Nov.-Dec. 1966).

In the calculation of threshold limit values for mixtures, the assumption of ideal behavior of liquid mixtures can lead to results considerably apart from actual conditions. Better results can be obtained by taking into account the activities of the components of such mixtures. The necessary equations and several examples are presented. There are 12 references.

-- Authors' abstr.

INDUSTRIAL DUSTS

- 177 Graphite Pneumoconiosis of Electrotypers. E.A. Gaensler, et al. Am. J. Med. 41, 864-882 (Dec. 1966).

Lung disease resulting from work with natural graphite has received scant attention despite the fact that this crystalline form of carbon is used in a wide variety of industrial processes. The few reports that appeared prior to 1950 are not easily interpreted because they dealt with roentgenographic findings only or because they concerned workers who had also been exposed to large amounts of rock dust, sand or clay. Among the eleven recorded cases with tissue studies, it appears that only three patients were exposed to natural graphite alone. Graphite lung disease has not been described in this country. The present paper is a report of four patients who were electrotype molders for 18 to 40 years. Their chief complaint was dyspnea and two died of cardiac pulmonary insufficiency. Chest roentgenograms, available in three, showed, respectively, fine reticulation, coarse nodulation and progressive massive fibrosis with cavitation. Lung function studies in three patients revealed severe respiratory impairment. In two the changes were those associated with the "alveolar-capillary block" syndrome with severely reduced diffusing capacity and markedly increased A-a oxygen gradients, venous admixture and physiologic deadspace, while in the third the picture was largely one of obstructive emphysema. A lung biopsy in one patient showed massive infiltration with black dust and a diffuse interstitial fibrosis. Postmortem examination in three revealed heavy black lungs filled with graphite, interstitial fibrosis, peripheral emphysema, massive fibrosis with "graphite cyst," severe vascular sclerosis and cor pulmonale. This picture was indistinguishable from that seen in coal workers with progressive massive fibrosis. Analysis of electrotypers' graphite and lung tissue revealed no detectable silica in two instances and 5% alpha cristobalite in one case. Heat and acid-treated slides showed a close relationship between silica and pathologic changes in one case and not in the other. Tuberculosis was ruled out as a cause of progressive massive fibrosis. Silica was thought to have played a small role, if any, because the pathologic picture did not resemble silicosis, because of the absence of significant amounts of silica in the lung tissue in two of three cases, and because pneumoconiosis with progressive massive fibrosis, as seen here, can be produced by silica-free

03122419