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Toxic Psychosis Caused by Inhalation of Petrol Fumes. M. F. Bethell. Brit. Med. J. 2, 276-277 (July 31, 1965).

A case report is given of a young boy who suffered acutely disturbing hallucinatory symptoms after voluntarily sniffing petrol vapors. A total of 15 other cases of such voluntary breathing of petrol fumes, and similar hallucinatory experiences are noted in the literature.-- APCA Absts.

Pneumatocele Formation Complicating Hydrocarbon Pneumonitis. O. Baghdassarian and S. Weiner. Am. J. Roentgenol. Radium Therapy Nuclear Med. 95, 104-110 (Sept. 1965).

Ingestion of petroleum distillates accounts for 21 to 25% of all fatal poisonings in children under the age of five years. Between 1951 and 1958, 763 deaths in the United States were attributed to hydrocarbon ingestion; 90% of these were in children under five years of age. Complications resulting from ingestion of petroleum distillates include central nervous system depression, degenerative and hemorrhagic changes in various viscera, and pneumonitis. Pneumonia and pulmonary edema are the greatest threats to life. Three patients who developed pneumatoceles following hydrocarbon pneumonia are reported. All threee progressed to complete recovery without evidence of superimposed infection or additional complication.-- Am. Rev. Resp. Dis. Absts.

The Formation of Persistent Toxic Chlorohydrins in Foodstuffs by Fumigation With Ethylene Oxide and With Propylene Oxide. F. Wesley, B. Rourke, and O. Darbishire. J. Food Sci. 30, 1037-1042 (Nov.-Dec. 1965).

Concentrations of ethylene chlorohydrin up to about 1,000 ppm were found in whole spices and ground spice mixtures after commercial fumigation with ethylene oxide. These chlorohydrins are persistent under food processing conditions. There are 16 references.

-- Public Health Eng. Absts.

Involutional Benzene Myelopathy With Appearance at Advanced Stage of Mediastinal Reticular Sarcoma. L. Paterni and V. Sarnari. Securitas 50, 55-59 (Oct. 1965). Italian.

This article illustrates a case of mediastinal glandular histiosarcoma with a tendency to generalization appearing during the course of myelopathy of average seriousness in a woman exposed to benzene working in a rotogravure press. -- Public Health Eng. Absts.

Osmotic Fragility Studies in Three Patients With Aplastic Anemia Due to Chronic Benzene Poisoning. M. Aksoy, et. al. Blut 13, 87-90 (May, 1966).

In three patients with aplastic anemia due to chronic benzene poisoning, osmotic fragility was tested before and after incubation, at 37°C. (98.6°F.) for 24 hours. Slight to moderate increases after incubation were observed in two patients, whereas in all cases the osmotic fragility was within normal range before incubation. -- J. Am. Med. Assn. References & Reviews

Ultrastructural Alterations in Deuterium Intoxication. H. O. H. Zunker and D. G. McKay. Arch. Pathol 82, 18-26 (July, 1966).

Deuterium intoxication was studied in three groups of animals that ingested 75% deuterium oxide-drinking water. In one group, four pregnant rats were given deuterium, beginning the tenth day of gestation. Histological study revealed areas of pyknotic nuclei in the renal tubules and basement membrane thickening of salivary gland acini. Another group given deuterium starting the 15th day of gestation was sacrificed five days later. An electron microscopic study showed an increase of large vacuoles and electron-dense cytoplasmic bodies in the cells of the proximal convoluted tubule. Enlargement of the endothelial and epithelial glomerular cells resulted in partial obliteration of capillary lumina. Degradation of the endoplasmic structures was observed in the cells of the salivary gland acini. In the third group, two mice received deuterium for nine to ten days. Alterations were more pronounced, with varying degrees of degeneration present in the cells of the proximal convoluted tubules. Deuterium may have an effect on water transfer.

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

INDUSTRIAL DUSTS

A Comparison of Impinger and Membrane Filter Techniques for Evaluating Air Samples in Asbestos Plants. H. E. Ayer, J. R. Lynch, and J. H. Fanney. Ann. N. Y. Acad. Sci. 132, 274-287 (Dec. 31, 1965).

The impinger method was developed for the evaluation of atmospheres in silicosis producing occupations. The impinger is an efficient collector of quartz and particles of a similar density,

3/4 micron in diameter and larger. To compare the ratio between impinger particle counts and membrane fiber counts, five main operations were selected: fiber preparations, carding, spinning, twisting, and weaving. Two hundred and 30 pairs of samples taken by two widely used sampling and counting methods were compared. These methods were counting of total dust in impinger samples, and counting fibers only on a membrane filter. -- APCA Absts.

992 Developments in Dust Sampling and Counting Techniques in the Asbestos Industry. S. Holmes. Ann. N.Y. Acad. Sci. 132, 288-297 (Dec. 31, 1965).

Asbestos dust has been recognized as an industrial hazard in Great Britain and an extensive survey of the textile side of the industry resulted in the formulation in 1931 of the Asbestos Industry Regulations. To assess the effect of the measures taken, it was necessary to employ some means for the sampling and analysis of airborne dusts, and a review was made of the available techniques. Thermal precipitators, the membrane filter technique, mounting the samples, and counting technique are discussed. -- APCA Absts.

993 Introduction to Symposium on Farmer's Lung. P.A. Bunn. N.Y. State J. Med. 65, 3013 (Dec. 15, 1965).

This symposium on farmer's lung was held at the new State University Hospital, Syracuse, N.Y., Feb. 9, 1965. In his introduction the author states that the syndrome goes by several synonyms and is among the so-called pneumoconioses related to exposure to the vegetable dusts. These include mill fever (organic dusts), byssinosis (cotton), bagassosis (moldy sugarcane), grain asthma (grain), tamarind asthma (tamarind seed), and weaver's cough (moldy cotton yarn). It is a fascinating disease and probably represents a very fundamental defect in the alveoli, giving rise to a classical alveolar capillary block. Unlike the original observations made about the pathogenesis, it may not necessarily be a specific infection but rather a condition with immunologic overtones producing a serious functional defect. -- APCA Absts.

994 Farmer's Lung as Observed in Chest Survey Clinics. J.M. Constantine. N.Y. State J. Med. 65, 3015-3020 (Dec. 15, 1965).

Four of the cases of farmer's lung seen in the clinics have been presented to illustrate: (1) an acute stage of farmer s lung, (2) super-imposed disease, (3) the natural history of progressive disease with continued exposure to the causative environment, (4) a late complicating incident which may or may not be related to farmer's lung. These are presented to help indicate the occurrence of farmer's lung in southeastern New York State as observed in the outpatient and field clinics and are not based on minutely examined and described inpatients. -- APCA Absts.

995 Identification Study of Farmer's Lung. J.R. Wilson. N.Y. State J. Med. 65, 3013-3015 (Dec. 15, 1965).

The incidence of farmer s lung was investigated in 16 medical clinics situated in farming areas of the U.S. and Canada. Circulating antibodies which reacted to the antigen of farmer's lung were found in 13.1% of a group of farmers exhibiting non-specific respiratory symptoms. The results of this study suggest that the disease has a widespread incidence and should be considered in agricultural workers who have otherwise unexplained respiratory symptoms. -- APCA Absts.

996 Farmer's Lung Disease in Eastern Pennsylvania. C. Laubach. N.Y. State J. Med. 65, 3020-3025 (Dec. 15, 1965).

A clinical evaluation of eight patients with some evidence of farmer's lung disease was summarized. Of 50 blood specimens analyzed by the method discussed by Emanual, et al., and Wenzel, et al., 10.7% were sero-positive. There seemed to be some associated electrophoretic pattern. The case histories of two patients are discussed in detail. -- APCA Absts.

997 Experimental Pine Pollen Granulomatous Pneumonia in the Rat. D.O. Adams. Am. J. Pathol. 49, 153-162 (July, 1966).

Speculation concerning a possible etiological relationship between pine pollen and sarcoidosis has stimulated interest in the experimental effects of pine pollen. Whole and ground grains of oak and pine pollen were injected into the lungs of rats. Animals receiving oak pollen developed only foreign body granulomas: animals receiving pine pollen developed epithelioid and foreign body granulomas. Epithelioid granulomas were more pronounced in areas were digestion of the resistant pine pollen was more advanced than in animals receiving ground pine pollen. The simple presence of pollen grains may evoke foreign body granulomas, and digestion of pine

1002 Tests for Effect of Asbestos on Benzo(a) Pyrene. Carcinogenesis in the Respiratory Tract. L. Miller, W.E. Smith, and S.W. Berliner. Ann. N.Y. Acad. Sci. 132, 489-500 (Dec. 1965).

Time of appearance and yields of papillomas and carcinomas in the respiratory tract of hamsters after intratracheal injections of benzo(a) pyrene are reported. Addition of chrysotile variety of asbestos in the injections gave results consistent with an hypothesis that this material promoted benzo(a) pyrene carcinogenesis in the respiratory tract. Addition of the amosite variety of asbestos to injections of benzo(a) pyrene did not increase the yield of tumors found in the respiratory tract. Two experiments were carried out. All lesions recognized as tumors in gross specimens by examination at 7X with a dissecting microscope proved to be papillomas or carcinomas when studied in histological sections. Tabulation of tumors in the present report is restricted to those that were detected by examination of gross specimens and then confirmed in histological sections. -- APCA Absts.

1003 The Occurrence of Pleural Calcification Among Asbestos Insulation Workers. I.J. Selikoff. Ann. N.Y. Acad. Sci. 132, 351-367 (Dec. 1965).

Roentgenographic study of 1,117 asbestos insulation workers showed pleural calcification to be a common finding, and 150 instances of such calcification were present. Data are presented which demonstrates that pleural calcification among workers exposed to asbestos in this trade rarely occurs in less than 20 years from onset to exposure. Pleural calcification was found in five of 725 asbestos insulation workers with less than 20 years from beginning work with asbestos. The pleural calcification is primarily found in the parietal pleura, more heavily, in the lower portions of the chest. Data concerning correlations with pleural fibrosis and asbestotic parenchymal fibrosis are given. Pleural calcification not infrequently is present in the absence of radiologically visible parenchymal fibrosis. The finding of calcification as described generally indicates asbestos exposure more than 20 years. -- APCA Absts.

1004 The Sequelae of Exposure to Asbestos Dust. J.C. Wagner. Ann. N.Y. Acad. Sci. 132, 691-695 (Dec. 31, 1965).

The sequelae of exposure to asbestos dust, include its inhalation, deposition, and the results of subsequent retention. The actual type of asbestos dust to which an individual is exposed depends upon the environment in which he works or lives and his occupation. It is necessary to know the mineralogical variety of asbestos and its contaminants, whether they come from the mines, mills, method of transport, or additives used in industry. The preliminary results of several experiments in which tumors have been obtained in experimental animals have been presented. In these studies a variety of dusts were inoculated into animals of several species. The yield of tumors is high but the dose of intrapleural dust is very large compared with the amount present in man. Experiments show that standard dusts from the different types of asbestos are required to establish a base line. This applies to dusts from all animal experiments, chemical analyses and other investigations. -- APCA Absts.

1005 Clinical, Radiological, and Physiological Findings in Asbestosis. M. Kleinfeld, J. Messite, and J. Shapiro. Arch. Internal Med. 117, 813-819 (June, 1966).

Clinical, electrocardiographic, and physiological observations were made of 21 asbestos workers who had an average exposure to asbestos dust of 29.2 years and who had radiological findings compatible with asbestosis. Ten of the 21 workers had chronic cough, and seven evidenced exertional dyspnea. Basilar crepitations were found in eight, and six had clubbing. Electrocardiographic findings were abnormal in six but in none of these were the abnormalities consistent with the criteria of cor pulmonale. In eight individuals, the pulmonary infiltration was minimal, in nine it was moderate, and in four it was classified as severe. Varying degrees of obliteration of the costophrenic sinuses was observed in 16 or cardiac borders in ten. Pleural calcification was observed in five. Two individuals showed emphysema which was localized. The abnormal lung function findings were consistent with a restrictive breathing and diffusion capacity impairment. This was characterized by low values in vital capacity (14 persons), in total lung capacity in (eight), and in diffusion capacity (13). The workers with dyspnea and/or crepitations had a significantly lower mean vital capacity and total lung capacity than those without these clinical findings. In addition, the group with pulmonary crepitations had a lower mean diffusion capacity for carbon monoxide ($D_{L_{CO}}$). There was a poor correlation between clubbing, vital capacity, total lung capacity, and diffusion capacity. There was a weak correlation between these lung function parameters and the degree of pulmonary infiltration. When 16 of the 21 workers were compared with a group of 20 asbestos workers of similar age and duration of exposure, but having negative radiological findings, there were no significant differences in clinical findings between the two groups. There was, however, a significantly lower vital capacity, total lung capacity, and diffusion capacity in the group with positive radiological signs as compared with the group with negative roentgenograms. There are ten references. -- Authors' summary

Asbestos, An Intrinsic Factor in the Pathogenesis of Bronchogenic Carcinoma and Mesothelioma. W.M. O'Donnell, R.H. Mann, and J.L. Grosh. Cancer 19, 1143-1148 (Aug. 1966).

In 55 asbestos textile workers who had pathologically proven asbestosis, 28 malignant neoplasms were found—23 bronchogenic carcinomas and five mesotheliomas of peritoneum or pleura. Of the 28 patients with neoplasms, 26 had been exposed to asbestos dust before 1936; the medium total occupational exposure was 20 years. The interval from initial exposure until the recognition of the neoplasms varied from 20 to 40 years. Thirteen of the individuals no longer were employed in the industry when evidence of the neoplasms appeared. The primary anatomical site of the carcinomas was in the lower lobes of the lungs in 22 patients and in one instance was multicentric in origin. In the morphologic classifications of the neoplasms, ten were of the squamous cell variety; seven were anaplastic; five were adenocarcinoma and one was bronchiolar. The frequent association of pulmonary asbestosis with bronchogenic carcinoma (42%) and mesothelioma (8%), as seen in this study, lends further support to the opinion that asbestos is a carcinogen in susceptible individuals after critical exposure in the textile phase of the industry.-- Authors' abst.

Biological Action of Glass Dust. K. Szymdzykiewicz. Med. Pracy (Lodz) 16, (4) 263-277 (1965).

In experimental conditions the biological action of two kinds of dust has been examined. These were polygonal glass dust, its geometric mean of particle size distribution being 2.5 microns, and fibrous dust, its geometric mean being 10.5 microns. Several experiments were carried out. In the first, both kinds of dust were administered to rats of Wistar race in doses of 0.5 mg., 2.5 mg., and 5.0 mg. in the form of suspension in 0.02 ml. of 0.9% sodium chloride between mesentery laminae of the small intestine. The animals were called (sacrificed) after three months; the nodules formed in places of dust injection were weighed and examined histopathologically. The increase of nodule weight in relation to the mass of injected dust was considered to be the measure of dust aggressiveness. It was stated that the mean increase of nodules weight after polygonal glass administration amounted to 3.7% and after fibrous glass administration to 270.0%. In the nodules the development of collagenous fibers was observed. In further experiments both dusts (in the amount of 50 mg./animal) were given by means of intratracheal injection to rats of Wistar race and to guinea pigs. The lungs and mediastinum lymphatic glands of the rats were examined after ten months and those of guinea pigs after 22 months. The hydroxyproline in the lungs was determined with Neuman Logan's method, and the histopathological and histochemical examinations were made. In all animals, statisically significant collagen increases ($p < 0.01$) were found in comparison with animals of the control group; however, no difference was seen in the collagen level in the lungs of animals which were given polygonal and fibrous dusts. Results of histopathological examinations have shown in all animals atelectasis foci and emphysema, fine-celled infiltrations around dust deposits and the increase of acid and neutral mucopolysaccharides. In animals which lived over ten months the slight development of silver absorptive and collagenous fibers was observed. Emphysema foci and atelectasis were greater in animals which were given fibrous glass dust. In animals which received polygonal dust, the inflammatory changes were prevalent. In the mediastinum lymphatic glands, were observed catarrhal alterations in sinuses, dust deposits, and abortive gigant (sic) cells. Fibrous glass dust provokes more severe injury of the lungs than polygonal dust. There exists a great probability of the development of fibrous changes of pneumoconiosis-like type when the exposure to great concentration of glass dust is prolonged.
-- APCA Absts.

EDITOR'S NOTE: Assuming that the abstract accurately translates the author's findings, the following comments are pertinent: (1) Quantitation of morphologic changes such as those of inflammation in sections of lung is subjective and uncertain. When possible, chemical determination of hydroxyproline as a measure of connective tissue proliferation is a much more reliable indicator of degree of chronic inflammation. The author's findings indicate insignificant difference in hydroxyproline content of lungs exposed to filamentous glass versus those exposed to polygonal glass. The author's predictions of fibrous changes from glass dust exposure are not supported by his own findings or by work in our own laboratory. (2) As no mention is made of the Ciba Symposium[1] definition of emphysema, it is likely that the emphysema described may be an artefact. (3) Inflammatory changes observed in animal lungs at autopsy may be due to epizootic infection. As they are often found in control as well as exposed animals, the greatest caution and judgment is required to avoid erroneous interpretation. (4) Pulmonary pathological effects should not be predicted from connective tissue changes in the mesentery (or elsewhere), because of basic differences in tissues and also conditions of exposure (i.e. respirability of particles). --PG

[1] Ciba Guest Symposium Report: Symposium, Sept. 1958. Thorax 14:286, 1959.