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Industrial Health News



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0415

Methods of Detection and Determination

[illegible] Microscopy on Asbestos Dust and on Lungs in Asbestosis. J. Kuehn. Arch.f.Gewerbepath., 10, 473 (April 15, 1942). (German)
The author reports some microscopic studies of asbestos and of lungs of asbestosis victims for the purpose of determining what variety of asbestos is responsible for asbestosis. Serpentine (chrysotolite) asbestos is the form generally used, and it was supposed that it would be found in lungs with asbestosis. Sundius and Bygden disclosed, however, that only hornblende asbestosis is demonstrable in the lungs, suggesting that serpentine dust is decomposed in the tissues. The author used the electron microscope to study the form, size and structure of asbestos, both in free dust and as found in the lungs. It is usually easy to distinguish the two forms under the electron microscope, the serpentine variety being generally curved, clear and transparent, and hornblende rigid and greater in diameter. However, examination of the particles from 3 lungs did not indicate clearly what variety was present. The photomicroscopic determination of the refraction exponent, suggested by Sundius and Bygden, was then employed. That method revealed that the large asbestos needles isolated from the lungs were of the hornblende type. It is concluded that serpentine asbestos is decomposed in the lungs and is the essential cause of fibrosis. When asbestosis lungs are macerated with nitric acid and hydrogen peroxide, both free asbestos needles and asbestosis bodies are obtained. Hornblende asbestos shows no signs of decomposition by the organism, either in the free needles or on the asbestosis bodies.

431 Polarigraphic Determination of Lead in Bones. E. Weinig. Z.Physiol. Chem., 272, 158-162 (1942). (German).
The polarigraphic method, which is fully described, has the advantages of use of smaller amounts of material, simpler preliminary treatment of the bone ash, and the automatic action of the polarigraph.

432 Biochemistry of Silicic Acid. IX. Isolation and Identification of Minerals in Lung Residues and Air-Borne Dusts from Coal Mines. G. Nagelschmidt and E.J. King. Biochem. J., 35, 152-158 (1941).
The isolation of mineral residues from lungs by digestion with hydrogen peroxide and removal of carbon from these residues and from air-borne dusts by heating to [illegible] are described. The minerals in the residues are then identified by X-ray diffraction methods. Data are presented for the constituents present in a lung residue and a mine dust; the main components are quartz and a member of each of the mica and kaolin groups.

433 A New Method for the Determination of Free Silica in Industrial Dusts. A. Brammer and L. Silverman. J.Ind.Hyg. & Tox., 25, 139-148 (April, 1943).
The authors describe a new method for free silica determination, in which the dust sample is first passed directly through a controlled flame, fusing practically all particles except those of silica. The fused sample is then collected by an electrostatic precipitator and removed to a microscope slide for analysis. The method can be applied to air-borne or rafter dust samples. The amount of free silica is determined by a direct count of the fused and unfused particles. Possible interfering materials are refractories and those which decrepitate at high temperatures. These interferences are not very common and when present a

715 Disinfection with Moving Hot Air. H. Kliewe. Ztschr. f. Hyg. u. Infektionsk 123, 727-733 (May, 1942). (German).
Cultures of five species of non-sporing and two of sporogenous bacteria were dried on filter-paper, and these were placed in linen bags which were distributed among packages of clothing in a hot air sterilizer. Cultivation of these objects after the maintenance of different temperatures for various periods showed that in order to be sure of destroying non-sporing bacteria it is advisable to use a temperature of 100°-110°C. for 1½ hours; the temperature necessary for destroying spores (130°C. sufficed for those tested) is such as would damage fabrics. Hot air sterilization is therefore unsuitable for clothing if total disinfection is required, but the usual object is to destroy the agents of infectious diseases, which are non-sporing bacteria and viruses. As might be expected discontinuous heating for short periods on successive days was no more effective than continuous heating for the same total period.

716 Heat and Ventilation in Air Raid Shelters. W.J. McGuinness. Heat., Pip., & A. Cond., 15, 193-196 (April, 1943).
This article gives the requirements for heating and ventilating air raid shelters. The various types of bombproof and splinterproof shelters are shown. The bombproof type is too expensive to construct, hence the most common type is the splinterproof. Shelter size is fixed by number of occupants. No more than 50 people should be placed in the same room. Space and volume requirements for overground and underground shelters are given in a table. Heat requirements are low because of the number of occupants, however, heat losses in England are different from ours because of climatic conditions. On this basis an underground shelter is preferable for American climatic conditions because of the lower ground temperatures which aid in heat loss maintenance. Ventilation requirements are given and the various types of systems employed are illustrated. Mechanical systems with filtration are recommended.

717 Wartime Operations Emphasize Industrial Hygiene Problems of Asbestos Industry. Illinois Labor Bull., 3, 10, 11, 22 (February 28, 1943).
The control of asbestosis must be an engineering control because there are no medical means to detect the disease until much harm has been done. Engineering control consists of two important principles: (1) Adequate exhaust, (2) Good housekeeping. By experiment it has been estimated that if the air contains less than 5,000,000 particles of asbestos per cubic foot there is small chance of the workers developing asbestosis. The article lists the procedures in the manufacture of rigid and of textile asbestos products and shows that further protective measures are still needed in most plants.

Industrial Medical Practice

718 Industrial Health - Its War and Postwar Significance. C.O. Sappington. Ind. Med., 12, 361-364 (June, 1943).
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The paper considers war and post war problems of industrial health, which are classified into those of medical administration, those of public health in industry and in the community and those relating to industrial hygiene and sanitation in the plant. Brief but rather comprehensive discussions of the following problems are presented: Venereal disease control; Nutrition; Immunization; Preplacement and periodic examinations; Women in Industry; Dermatoses; Absenteeism;