Ventilating, Air Conditioning and Engineering Control

THE RATE OF BACTERICIDAL ACTION OF TRIETHYLENE GLYCOL VAPOR ON MICROÖRGANISMS DISPERSED INTO THE AIR IN SMALL DROPLETS. WILLIAM LESTER JR., O. H. ROBERTSON, THEODORE T. PUCK, HENRY WISE and MABEL SMITH, Am. J. Hyg. **50**:175, 1949.

Hemolytic streptococcic group C, pneumococci type I and Staphylococcus albus were atomized into a room constructed to maintain temperature, relative humidity and the degree of glycol vapor saturation at the desired level. The bacterial content of the air was determined by means of bubbler sampler and blood agar settling plates. In four minutes the air samples were essentially free from bacteria when the experiment was carried out at 15 to 40 per cent relative humidity and 40 to 100 per cent saturation of glycol vapor at room temperature. The apparent bactericidal action increased progressively as the relative humidity increased from 5 to 55 per cent with increasing percentage saturation of glycol vapor. When humidity increased beyond 50 per cent, rapid diminution of the rate of killing of the bacterial cells occurred with any given percentage saturation of glycol vapor.

ADAPTATION OF CHEM. ABST.

DESIGN OF PUSH-PULL EXHAUST SYSTEMS. JOHN F. EGE and LESLIE SILVERMAN, Heating & Ventilating **47**:73 (Oct.) 1950.

Preliminary data are given on design of push-pull ventilation for tanks. The value of jet confinement is clearly demonstrated. Basic characteristics, velocity contours and entrainment of such jets are presented. The influence of liquid level on velocity contours is shown in a series of charts. Typical examples indicate the merits of the confined jet with respect to the free jet.

LESLIE SILVERMAN, Boston.

NEW SAFETY EXPLOSIVES FOR DUSTY OR FIERY COAL MINES. R. SAINT GUILHEM, Indust. Safety Survey **26**:81-94 (May-June) 1950.

All explosives, even the safest, ignite firedamp (methane) if detonated under suitable conditions. A high degree of safety can be had in shotfiring in mines by adding inhibiting substances mixed with the explosive or wrapped around it as a sheath.

The French claim success may be had by adding a high proportion of sodium chloride to the explosive but not by sheathing.

The author credits the United States with success in using substitutes like Cardox, which is CO_2 in a special cartridge. Also in the United States great stress is laid on dust control and on ventilation.

PHILIP DRINKER, Boston.

AIR CONDITIONING AND THE HEALTH OF THE INDUSTRIAL WORKER. T. BEDFORD, J. Instn. Heat & Vent. Engin. **17**:112 (May) 1949.

The quality of air has a profound influence on health. Air conditioning increases worker efficiency and comfort but has no effect on the incidence of sickness. Among men doing heavy work and exposed to sudden changes of temperature, illness and mortality rates are higher. Good ventilation is desired, but the effectiveness of air germicides is doubtful. Accidents are at a minimum at temperatures between 65 and 69 F. Equivalent temperature, which makes allowances for radiation, dry bulb temperature and air movements, is often a better index of warmth than effective temperature. Adequate and variable air movement is desired. Thirty-seven references are given.

G. B. P. [REFRIG. ABST.].

DECONTAMINATION AND REMOVAL OF SPILLED MERCURY BY FERRIC CHLORIDE. S. F. YAVOROVSKAYA, Gigiena i Sanit., 1949, no. 3, p. 19.

A 20 per cent solution of $FeCl_3$ is a most effective decontaminant for Hg drops; the coating produced on the droplets is more effective and durable than is that formed by other agents: oil, dilute HNO_3, $KMnO_4$, H_2S, S emulsions, clay. The effect is that of sharp lowering of the vapor pressure of Hg in the surrounding air; thus 1.5 mg./cu. m. concentration was reduced to 0.01 in experiments lasting up to 70 days (at the end of the period a rise of 0.07 was noted).

G. M. KOSOLAPOFF [CHEM. ABST.].