

also included 71 employees engaged in other work. The Takata-Ara reaction was negative in all cases, and the erythrocyte sedimentation rate was within normal limits; the bleeding and clotting times were normal, but the Rumpel-Leede test gave positive results (appearance of minute subcutaneous hemorrhages below the area of a rubber bandage applied to the upper arm) in many of those engaged in paint-spraying. The red cell count was normal in all cases, but a slight leukocytosis was found. Sternal puncture was performed on five sprayers; no abnormality was found apart from slight lymphocytosis. It is concluded that no toxic effects were produced by the benzene vapor to which these sprayers were exposed in the given circumstances.

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Environmental Conditions

TECHNICAL AND ADMINISTRATIVE REPORT ON AIR POLLUTION CONTROL IN LOS ANGELES COUNTY: ANNUAL REPORT 1949-1950. Air Pollution Control District, County of Los Angeles.

ATMOSPHERIC POLLUTION. LOUIS C. McCABE, *Indust. & Engin. Chem.* **43**:79A (Feb.) 1951.

On Nov. 25, 1950, 22 deaths were reported from the refining town of Poza Rica, Mexico, as due to atmospheric pollution. The author visited the site of the accident and now describes his findings.

Until recently little use was made of the 100,000,000 cu. ft. (2,830,000 cu. m.) of hydrogen sulfide—net natural gas evolved daily in the oil fields of Poza Rica. To meet new demands for sulfur and for sulfur-free gas, equipment was being installed to strip the gas of its hydrogen sulfide for eventual sulfur recovery. At the time of the accident over half the gas was being cleaned of hydrogen sulfide, but the sulfur recovery units were not completed. Waste gas, containing 16 per cent hydrogen sulfide, was being sent to flare 90 ft. (27 m.) above the ground at the rate of 10,000,000 cu. ft. (283,000 cu. m.) per day with additional gas to insure combustion.

On Nov. 21, mono-ethylamine overflowed into the burners and pilot light, necessitating drainage of the lines and re-ignition of the flare. At 4:40 a. m. on Nov. 24 gas was reported outside the plant and by 5:10 a. m. a shutdown had been achieved. Unfortunately, heavy fog hung over the area between 4 a. m. and 6 a. m., and temperature inversion was reported.

In the town there were 320 casualties requiring hospitalization. The houses in which the 22 deaths occurred were between 350 and 1,000 ft. (106.5 and 364.5 m.) of the base of the flare.

It was thought that the burners probably failed as a result of blocking by carbonized amine solution, and hydrogen sulfide was thereby allowed to flow into the nearby village. The flare is to be moved to a distant point until such time as the sulfur recovery units are in full action.

J. C. McDONALD, Boston.

ATMOSPHERIC POLLUTION IN THE VICINITY OF A CHROMATE PLANT. H. G. BOURNE JR. and W. R. RUSHIN, *Indust. Med.* **19**:568-569 (Dec.) 1950.

Concentrations of chromium in the atmosphere were determined at varying leeward distances from the source. Samples were collected on filter paper. The weight of chromium was determined polarographically. The concentration decreased gradually from 0.12 mg./m.³ at 100 ft. (30.5 m.) to 0.06 mg./m.³ at 2,000 ft. (609.5 m.). Beyond this it dropped rapidly and at 10,000 ft. (3048 m.) approached the value of the blanks (0.001 mg./m.³). Pollution sources varied from 0 to 78 ft. (23.5 m.) in height. Orthogonal deviation of the sampling apparatus from the cloud axis due to shifting of wind direction may have caused values to be low.

MARY O. AMDUR, Boston.

CONTAMINATION OF ATMOSPHERE BY PRODUCTS OF INCOMPLETE COMBUSTION AND THEIR HYGIENIC SIGNIFICANCE. N. M. TOMSON, *Gigiena i Sanit.*, 1950, no. 2, p. 8.

A review of public health hazards from pyrolytic products in smoke is presented. In addition it is shown that distillation of shale oils at high temperatures (800-900°) gave appreciable