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CONTENTS

PRESENT DAY HEALTH PROBLEMS IN THE PETROLEUM INDUSTRY*

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The study of the history of medicine (1) indicates that, since the time of Hippocrates (460-377 BC) certain disease entities have been associated epidemiologically with particular crafts and trades. Bernardo Ramazzini (1633-1714), who is considered to be the father of Industrial Medicine, in 1700 published a monumental two volume treatise entitled "De morbis artificium" (2). In this work he discusses the diseases of 52 occupations including miners, goldsmiths, surgeons, chemists, painters, blacksmiths, fullers, masons, wrestlers, farmers, grave diggers, midwives, nurses, and soldiers. In describing the conditions associated with these trades, he frequently refers to writings of Hippocrates, Celsus, and Galen.

Well-known examples of diseases associated with a particular trade or industry in more modern times, are the scrotal cancers in chimney sweeps; silicosis of the lungs in sand blasters; anthracosis in coal miners; plumbism in lead workers; anthrax in tanners, etc.

In the light of the present-day knowledge and practices in the field of occupational medicine, these disease conditions would not have occurred. In each instance the disease occurred in a large percentage of the workers in each one of these industries or trades as the result of repeated exposures to a substance in the working environment. This substance entered the body either through skin contact, ingestion, or inhalation, and then reacted with specific tissues of the body to cause recognizable pathological and physiological changes in the organism.

Today we know that applying the principles of occupational medicine through periodic medical control of workers, protection of the worker against potentially harmful exposure, correction and control of the working environment through industrial hygiene measures—either individually or in combination—would have prevented the occurrence of these diseases in those so occupied.

A review of medical literature, however, fails to find any references

*Presented at the Twelfth International Congress on Occupational Health, Helsinki, Finland, July 1-6, 1957.

8. Light Oils	Benzol
a. Gasoline	Menthyl Ethyl Ketone
b. Kerosene	Phenol
c. Varsol	Inorganic Dusts
d. Naphtha, Heating Oil, etc.	Carbon Tetrachloride
	Mercury

Chart No. 11 shows potential exposures related to Maintenance and Repair Operations.

CHART NO. 11

SOME MAINTENANCE AND REPAIR OPERATIONS WHICH PRESENT POTENTIAL EXPOSURES

OPERATION	POTENTIAL EXPOSURES AND HAZARDS
Welding, Pipe Fitting	Metal Fume Fever, Fluorides, Heat, etc.
Insulating	Dermatitis, Solvents
Brick Laying	
Painting	Asbestos
Instrument Repair	Silica Dust
Lead Burning, Foundry	Solvents, Thinners, Lead, etc.
Ship Repairs (Drydock)	Mercury, Solvents
Machine Shops	Lead
Others	Silica Dusts, Lead, Brass Fumes, etc. Welding, Burning, Painting, etc. Degreasing, Metalizing, etc.

When the fact that such potential hazards exist in the petroleum industry is examined along with the infrequency of the occurrence of occupational disease, it is evident that the engineering developments in the design of equipment and processes, plus the periodic examination and control of the working environment by industrial hygiene measures, along with periodic health examinations of the employees, have been effective in maintaining the health of the petroleum worker.

An excellent example of the effectiveness of teamwork by those responsible for the control of potential hazards in an industry is demonstrated by the cancer control program put into effect in the processing of high boiling catalytically cracked oils (19). In the year 1942, the first commercial unit for Fluid catalytic cracking was placed into operation in our company. In this operation certain petroleum fractions are heated in the presence of a catalyst, and large petroleum molecules are broken down into small molecules. A residual material is formed which