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CHAPTER XII

THE PREVENTION OF INDUSTRIAL DISEASES

ELSEWHERE WE DEFINED an industrial disease as a toxemia resulting from too great exposure to a toxic substance or to an unfavorable working environment. Obviously, then, the avoidance of such an exposure furnishes the first and most important defense against industrial disease. Generally it is unnecessary to prohibit *all* exposure to a toxic substance—most substances have threshold doses. In Chapter VIII we have given figures of permissible concentrations for certain dusts, fumes, and for one mist, chromic acid. Hamilton [70] and Henderson and Haggard [79] and publications of the U. S. Public Health Service give the available data on gases [151].

Perhaps the second most obvious preventive

measure is the limiting of working hours so that the exposure will be sub-threshold. Usually such limitation is developed by practical experience and later is put upon a sound scientific basis by appropriate laboratory experimentation. Notable examples of limitation of exposure are shown in the rules for working in compressed air and again for working in hot deep mines (Chapter IV). In both of these examples industry would welcome a normal full working day if the resulting exposure were physiologically safe for man.

A third method which is always sought by an industry which finds itself in toxicological trouble, is the development or substitution of a safe process for that which is causing trouble. A familiar example is the almost total elimination of benzol poisoning [69] by the use of less toxic solvents in place of benzol—toluol and xylol. In dusty trades it is often feasible to change a process so that it becomes non-dusty. Examples can be seen in any plant doing sand-blasting; a few years ago the abrasive was sand and the blasting frequently was done on the open