

occur on working premises, and in conformity with this view we earlier gave a preliminary value of 6 mg. of trichloroacetic acid per liter of urine (Forssman and Ahlmark,⁵ 1946) as the highest value that should be allowed. This hygienic limit should be used if only a few samples of urine are available. In consideration of the variation of excretion in the individual in the course of 24 hours and from individual to individual, however, it is more advisable, in judging the conditions of exposure on working premises on the basis of low values of trichloroacetic acid excretion, always to require several samples of urine, preferably from several persons. In such circumstances it would seem that somewhat higher trichloroacetic values are permissible.

The limit for an incipient definite trichloroethylene effect has in the foregoing pages been judged to lie at an excretion of 20 mg. per liter of urine. Such effects

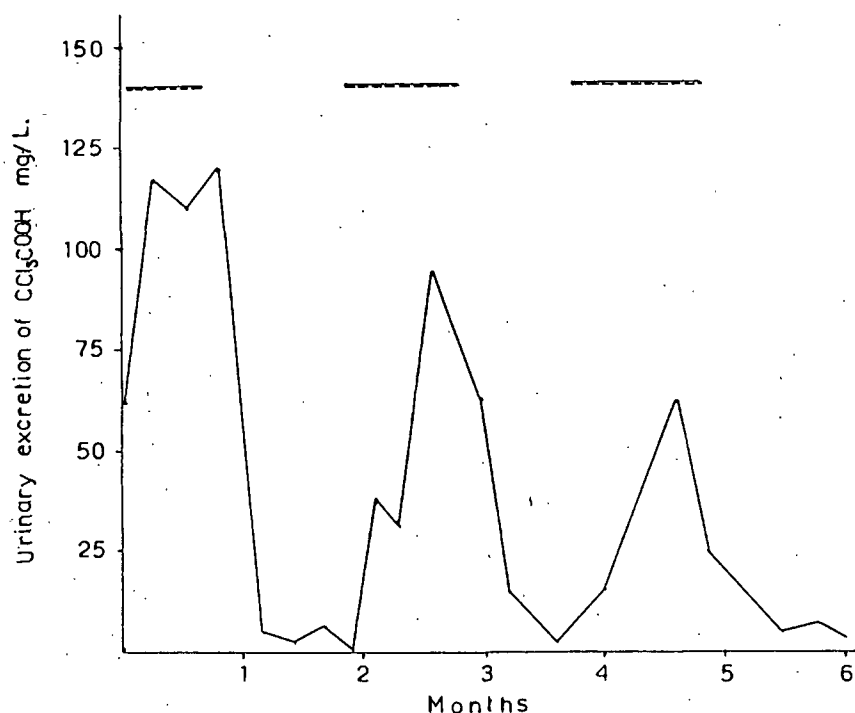


Chart 3.—Urinary concentration of trichloroacetic acid as determined for a worker exposed to trichloroethylene during three periods, each of about one month. The working conditions in the factory were being continually improved. During the intervals the worker was not employed in work associated with the use of trichloroethylene.

are possible in certain cases with lower values, but they are not common or particularly severe. Only when the excretion is 10 times as much as this, it seems, are the symptoms so severe that in a number of cases sick-leave may be indicated. In such circumstances an excretion of, at the most, 20 mg. per liter on an average where the workers are constantly exposed to trichloroethylene would seem from the medical point of view to be tolerable on working premises. Where it is difficult to carry out the recommended precautionary measures in a short time, circulation of workers may be necessary.

For a final fixing of the tolerable limit one should follow the state of health and the excretion of trichloroacetic acid over a longer period in the case of workers with a low degree of trichloroethylene exposure. A clinical experimental analysis of cases in which exposure is slight would doubtless also provide a more secure