uneasy or dream-vitiated sleep, emotional outbursts, epileptic fits and trichloroethylene narcomania. Only in a few cases was there a distinct acute trichloroethylene poisoning.

Summarizing, one may say that a constant exposure to trichloroethylene which gives rise to an excretion of trichloroacetic acid of less than 20 mg. per liter of urine does not entail, or entails only in exceptional cases, any definite trichloroethylene effects, whereas with values of over 20 mg. per liter of urine one sees such effects in an increasing percentage of cases directly proportional to the increasing excretion. Thus, with values of between 40 and 75 mg. per liter, such effects occur in about half of the cases, and with an excretion exceeding 100 mg. trichloroethylene effects are very common.

It has not been possible to show any connection between the ages of the exposed workers and the effects of trichloroethylene. It should be noted however, that none of the examined persons was younger than 18 years. Nor has it been possible to show any definite difference in the frequency of affected persons as between men and women. It would appear, however, that headache and the sensation of sickness have been commoner signs of trichloroethylene effect among the women than among the men.

For a definite assessment of the importance of the duration of exposure for the degree of effect the present material is much too limited. The following observations, however, are worth noting. Among those who excreted less than 20 mg. of trichloroacetic acid per liter of urine and who were believed to be suffering from the effects of trichloroethylene, the period of exposure was, for all nine persons, one year or longer. This may possibly support the assumption either that a relatively long period is required before signs of the effects become manifest with this relatively slight exposure or that certain symptoms remain from earlier, possibly more extensive exposure (see page 391).

On the other hand, in the group of affected persons with an excretion exceeding 50 mg., altogether 35 persons,[12] a period of exposure of more than five years was found for no fewer than 14. Even if we lack exact data concerning the degree of exposure to trichloroethylene experienced by these persons in previous years, there is nothing to favor the assumption that the exposure had been less than at the time of the examination in other than exceptional cases. It thus seems that a rather pronounced exposure to trichloroethylene can be tolerated, at least by certain persons, for a period of several years without any very serious toxic effect, even if some effects have existed. It should be noted, however, that we have not carried out any follow-up examination of those workers who terminated their employment after several years' exposure. The risk of a prolonged effect due to trichloroethylene must therefore be made the subject of continued investigations.

Of the 15 persons who excreted more than 20 mg. per liter of urine and were not affected or probably not affected, only four had been exposed for more than one year, a finding which possibly indicates that generally a higher degree of exposure may be experienced for a short period without symptoms of trichloroethylene effect arising.

Special Assessment of a Group of Cases with More Definite Effects.—One of the chief aims of the present investigation has been to ascertain at what degree

12. For one person in this group the period of exposure was not known.