9. The third effect of alcohol commences when the stage of drunkenness is reached. Alcohol then ceases to operate as a drug, and begins to operate as a poison upon the central nervous system. That involves danger to life. If the use of alcohol to the poisonous stage is continued by a normal person, chronic alcoholism is likely to arise and bring about diseased conditions of the organs of the drinker which may be of a permanent character. The important factors which contribute to chronic alcoholism are: (1) the use of strong alcoholic beverages, (2) the frequent repetition of the dose, (3) drinking without food, and (4) the use of alcohol as a source of energy in place of proper food. On the other hand, the effect varies with the individual. One person can take more alcoholic liquor than another without harmful effects, but it is established that any person suffering from a nervous disorder is particularly susceptible to the effect of alcohol and that its use is definitely injurious to him.

10. Effective doses of alcohol lower efficiency by decreasing accuracy. The deleterious effects are least marked in tasks that are familiar or do not require much attention. The effects vary also with the conditions under which they occur. They vary also for different individuals and also by reference to the extent to which the individual is accustomed to the effects of alcohol. Even so, it appears that most observers conclude that 30 c.c. of alcohol, or even less, has definite effects on performance and behaviour (28·5 c.c. equals 1 fluid ounce). Doses of 20 to 40 c.c. of alcohol practically double the errors in close work. With some individuals, 10 c.c. may produce this result, while habitual drinkers are more resistant. The concentration in which the alcohol is given does not materially influence the response, but the effect is less when the alcohol is taken with or just after meals, for then it is more slowly absorbed. The harmful effect of alcohol upon the driver of a motor-car is well known and, in the light of the facts stated, need not be elaborated.

11. The properties which make alcohol attractive as a beverage are: (1) its rubefacient effect on the lining of the stomach, producing an agreeable sense of warmth, (2) its property of dilating the peripheral circulation, producing an agreeable sensation of glow, and (3) its property of reducing the co-ordination of the nerve centres and thereby removing, from a slight to an increasingly greater extent, the inhibitions and controls of the individual. The results are described in a scientific text-book "A Manual of Pharmacology," by Sollmann (1943), (R. 3536E) in these words:—

> There is an increased vivacity of motion, action, and speech, which later may acquire a stamp of brilliancy, perhaps of inspiration. The subjective condition of the individual generally veers towards self-appreciation. Shyness, if it ordinarily exists, is replaced by self-confidence. The person under the influence of alcohol feels an unlimited confidence in his own powers and accomplishments, both intellectual and physical. He attempts difficult and impossible tasks, and feels that he accomplishes them. He may similarly overestimate the performance of others.

The author continues:—

> The view that alcohol increases the intellectual and physical powers of the individual is shown by actual experiments to be erroneous, and based almost entirely upon the subjective condition of the individual, his weakened faculty of judgment, and premature but faulty or misdirected reactions. The failure of alcohol to produce real stimulation is also attested by common experience. Persons who have to undergo severe exertion, either physical or intellectual, very rarely take alcohol before or during their labour, but only when this is finished, and then not for any stimulating, but really for its depressing effect, for the feeling of comfort and general relaxation which it induces. The continued use of large doses of alcohol greatly diminishes the activity of the individual, and even moderate doses tend to have the same effect. (R. 3536 F and G.)

12. Both Professor D'Ath and Dr. Richards were agreed that the consumption of alcohol may be regarded as reasonable if it is not excessive, but they were not in agreement as to what is excessive. Dr. Richards took the view that any consumption above "minimal quantities" is excessive, because it has a harmful effect upon health. He explained that the body can metabolize—*i.e.*, oxidize within the blood-stream and render harmless—10 c.c. of alcohol in an hour (R. 3536D). It might then be thought that 240 c.c., or about 8 oz. of alcohol could be metabolized within twenty-four hours. That would only be so, however, if 10 c.c. were taken every hour. The fact is that any