

considerably greater than the average for the United States, and almost equal to the average European rate.*

The annual rate for Toronto alone was 5.15 per 100,000. Out of 2,011 cases of deaths from diabetes occurring in England and Wales, about 12 per cent. were twenty years of age or under, while in Ontario the percentage was a little over twenty. It would therefore seem that unless a sufficient number of fatal cases of diabetes insipidus have occurred to materially affect the figures, we may conclude that Ontario has a greater death rate from diabetes mellitus than has the United States, and almost as large as the average European rate. Moreover, a larger percentage of cases occurs in young people in Ontario than in England and Wales.

The disease is said to be unknown among the Chinese and Japanese, and the negroes of Africa, and this immunity of the negro appears to persist, partially at least, in America. On the other hand it is very common among Jews, and in certain large cities of Europe, particularly Paris. Intense application to business, over-indulgence in food and drink, with a sedentary life, seem particularly prone to induce the disease.

The excessive use of sugar, beer and cider does not in itself appear to cause the disease to prevail. Deaths from diabetes in the cider-drinking counties of England and the beer-drinking counties of Prussia are below the average. It is possible, however, that in individual cases, such as the one I have related, the excessive use of these articles may stand in a causal relation to the onset of the disease. There is frequently a family predisposition, but I could find no history of such in my patient.

The pathology of diabetes is still involved in some obscurity. It is not likely that any one theory will be found to explain all cases. Normally, the carbohydrates taken in the food are stored in the liver as glycogen or animal starch. The glycogen is withdrawn from the liver as required by the system, being reconverted into sugar. Whenever the sugar in the systemic blood exceeds a certain amount, it appears in the urine, setting up glycosuria. This condition may be supposed to be produced by (1) An excessive amount of food, more than the liver is able to store up as glycogen, so that part of the sugar coming to the liver in the portal vein passes directly into the systemic circulation. This would explain some of the cases which are easily controlled by regulation of the diet; (2) some disturbance of the liver function

* The details of the deaths in a few of the large towns were omitted from the copy of the report for 1896, which I secured. In striking the average rate, however, the population of these towns was deducted from the total population of the Province, so that the omission would not likely affect the average rate one way or the other. The average population of the Province for the five years was estimated as 2,754,566.