

SATURDAY, May 30, 1914.

The Committee met at 11 a.m., the Chairman, Mr. Broder, presiding.

The CHAIRMAN.—There is an article in the London *Lancet* of August 24, 1912, which deals with cigarettes. It is a moderate statement containing a number of very interesting facts which doubtless the public would be anxious to get. I think it would be wise to have portions of this article embodied in the evidence. What is the wish of the Committee?

Mr. TURGEON.—I think that might very well be done.

The CHAIRMAN.—Then we will direct the reporter to copy those portions of the article which relate more particularly to the subject of our investigation, and incorporate them in the evidence.

‘FURFUROL OR ALDEHYDES IN TOBACCO SMOKE—CIGARETTE, CIGAR AND PIPE.’

‘Amongst these we find is furfural and curiously enough this irritating substance is commonly distinctive of the smoke from the cheaper kinds of Virginian cigarette. It is present also in very minute amount in the smoke of the Turkish cigarette, while in most cases it is completely absent in the smoke from the pipe and cigar. Furfural, of course, belongs to the class of bodies known as aldehydes, which are decidedly pharmacologically active, giving rise on administration to very disagreeable effects. To aldehydes the poisonous effects of crude, immature whisky are ascribed, although they occur in relatively small quantity, but the furfural contained in the smoke of only one Virginian cigarette may amount, according to our experiment, to as much as is present in a couple of fluid ounces of whisky. It would be premature at this stage to assert positively that furfural is accountable for the ill-effects of excessive cigarette smoking, but it is at least a significant fact that it is always present in the smoke of the cheap and popular American cigarette, while it is only a traceable constituent of pipe smoke, and is practically absent in cigar smoke or that produced in the Turkish or Egyptian cigarette. Its formation possibly coincides with the production, also of other aldehydes, while carbon monoxide is another poisonous constituents. Aldehydes, of which furfural is a type, are pungent substances, and cause an irritant action upon all mucous membranes, and it is remarkable that throat troubles are commonly associated with cigarette smoking and not with the pipe or cigar. The injurious action would be enhanced by the rapid absorption which takes place on inhalation. These considerations seemed to us to make it worth while to examine tobacco smoke from cigar, pipe, and cigarettes respectively with regard to the amount (if any) of furfural in it, and accordingly we submitted to test a number of specimens of familiar brands of cigarettes, cigars and pipe tobacco, purchased in the open market. The results are presented in the accompanying table, in which not only is the furfural recorded, but also the amounts of nicotine in the original tobacco, and in the smoke obtained therefrom, as well as the alkalinity of the smoke returned in terms of ammonia (NH₃).

‘It will be seen from these results that in pipe smoke the furfural varied from 0.004 per cent to 0.030 per cent of the weight of the tobacco smoked; in cigar smoke it was absent altogether; in the smoke of Turkish and Egyptian cigarettes it only amounted to 0.01 per cent; while in the smoke of Virginian or American cigarettes