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DISEASES IN THE WIND.

Read before the Canadian Institute, Toronto, March 22nd, 1864, by Cecil Glyn, M.D., Lecturer on Materia Medica and Therapeutics in the Toronto School of Medicine. (Continued.)

It is said that if an average hundred of our people from the country were exposed to the most powerful and concentrated dose of cholera poison with which we were ever visited, probably not more than one in ten would be affected by cholera, the remainder either escaping altogether or suffering only from diarrhoea. The case would be reversed, however, if you selected the hundred from the poor localities, where they are under-fed, over-worked, uncleanly, intemperate, and overcrowded, breathing foul air, drinking bad water, and whisky. In the case of cholera, if we do not know positively what the exciting poison is, we at least know its habits and the laws under which it acts; and by proper precautions, strictly carried out, with regard to the predisposing causes, we may, as a general rule, either guard our communities safely from its ravages, or deprive it of much of its force and danger.

Not so, however, with all diseases of atmospheric origin.

There is one disease, if not more, the cause of which has, up to this time, baffled all our attempts to define its habits. Like the wind, on which it rides, it goes where it lists, and no man knoweth where it goes or whence it comes.

Watson says: "It is unquestionably connected with some particular state or contamination of the atmosphere, what that state is, or what may be the kind of contamination, no one knows."

"There is no uniform connection," says Hancock, "between any one sensible quality of the atmosphere, as to heat or cold, rain or drought, wind or calm, and the prevalence of this epidemic; for in different places it has maintained itself under the dominion of each of these states of the atmosphere."

Maertens tells us that on a certain cold night in St. Petersburg, the thermometer rose 30° F., and the next morning forty thousand people were ill with influenza.

The cause of influenza must be very widely diffused, and rapidly developed during the prevalence of the epidemic; we find it attacking large tracts of country, or whole towns, almost simultaneously, ships crews, hundreds of miles apart on the ocean have been disabled almost at the same moment, towns widely separated have been visited so rapidly, as to preclude the possibility of its propagation by contagion.

It travels faster, and is more general or universal in its attacks than any other known epidemic, and the question very naturally arises as to what is the cause of influenza?

The question is pretty fully discussed by Drs. Hancock, and Watson.

The theory which attributes it to the prevalence of an excess of ozone in the atmosphere, is the one for which I have the strongest attachment.

When we consider the nature and effects of ozone, we can account for many circumstances connected or associated with epidemics of influenza, for which we formerly could not account.

A good deal of discredit or disbelief has been attached to the subject of ozone, from a misapprehension of the relations sustained by ozone to influenza, fever, and cholera. When first discovered, it was looked upon as the cause of nearly every disease of atmospheric origin, but we have been unable to prove that such is the case.

I hope to show that it may be the exciting cause of some diseases, while it may only be a predisposing cause of others.

It was observed, as early as 1803, that epidemics of influenza were often followed by epidemic cholera, and as Dr. Hancock says, the facts collected show that there is a closer connection between certain epidemic diseases, both as to their causes and affinity than we commonly suppose.

I have already shewn that the presence of a large amount of disintegrating nitrogenous matter in the blood appears necessary to enable the cholera poison to work out its destiny to the full extent.

If it can be shewn that influenza is produced by an excess of ozone in the air, and that ozone leads to disintegration of blood, then we can understand the connexion between influenza and cholera, and the exact relation sustained by ozone in the causation of the latter disease.

All the phenomena of influenza identify it with those diseases, or fevers, connected with, or resulting from poisoning of the blood, by the presence of decomposing organic matter, and the experiments of Mr. Hornidge show that ozone mixed with blood, out of the body, has the effect of breaking up the red corpuscles to such a degree that no trace of them remains, save a few granules; even the separated serum of blood, if shaken with ozonized air, becomes turbid, and throws down a sediment.

If you take blood freed from fibrin, and made quite red by shaking it in the air, and mix it with ozone, it undergoes a gradual change of color, it darkens, becoming like venous blood, and at last turns perfectly black; this change taking place in the course of forty-eight hours if the blood is cold, but in three or four hours when kept warm.

Blood is very greedy of ozone, and absorbs it very rapidly, and in large quantities, either from the air, or from other solutions.

It is said that the corpuscles will absorb much more ozonized oxygen than unozonized.

Now as ozone is a peculiar form of oxygen, it is altogether probable, that we have it, when in excess in the air, passing into the blood as oxygen would, and when there, producing those changes in the