

THE CANADIAN MAGAZINE

OF
SCIENCE AND THE INDUSTRIAL ARTS.

Patent Office Record.

Vol. XX.

JANUARY, 1892.

No. 1.

ON THE EFFECTUAL AND SPEEDY CURE OF INFLUENZA.*

BY JOHN CRERAR, M.R.C.P. EDIN., ETC.

[In the course of his address Mr. Crerar said that he had formed a new theory of the treatment of acute infective diseases, based on the "analogy of nature," whereby is meant such an inference, for example, that the earth is globular, from observation of the uniform shape of the other heavenly bodies. Applying this to the study of micro-organisms, he infers that their life and reproductive activity depend upon their inhabiting suitable nutrient media under fit conditions.] Thus Klein tells us that a cubic centimeter of beef tea, kept in an incubator at a temperature of 98° F., and peopled by bacilli, multiplies its population 80,000 times in the first twenty-four hours, 450 times in the second twenty-four hours, and only five times in the third twenty-four hours. We thus find that, as the food supply becomes diminished, and the peculiar product of the fermentative process increased, the reproduction gradually declines and ultimately disappears. During the process of reproduction and growth of a micro-organism there is a peculiar substance excreted, or formed, which is baneful to its own microbe, and as this substance increases in quantity it diminishes the vitality of the microbe, and when it reaches a certain proportion it destroys the life of its microbe. When the yeast fungus is placed in an infusion of malt, it grows rapidly, at a suitable temperature, until the alcohol formed in its presence accumulates to 20 per cent of the whole quantity of the liquid; the alcohol then arrests the growth of the fungus, and the alcoholic fermentation proceeds no further. In the same way, Dr. Burdon-Sanderson has shown that the peculiar secretion of a bacillus is very destructive to the bacillus itself. These facts are of the highest importance when pathogenic fungi are considered in their relation to disease. The application of such facts to the treatment of infective diseases would, then, consist in bringing about in the system a

change in the environment of the microbes analogous to that which is spontaneously effected by their own activity, since they apparently excrete products which in sufficient quantity are inimical to their own existence. Hence the possibility of a disease exhausting itself, as it were, without any treatment, provided that the vital powers of the patient can resist the poison more than the microbe that produces it.

It appears then, that we are continually liable to attack, but if we can by any means (and I think we can) so alter the state of the body as to make it intolerable to the minute invaders, we secure a valuable truce, and gain time to allow the organism to build up a vitality high enough to get beyond the reach of our remorseless foe, and we may thus save our patient. Hitherto the search for such a desirable agent has been chiefly carried on in connection with the cultivation and study of the pathogenic microbe. I propose to look for a similar substance in connection with the changes which invariably take place in the system of the patient during the acute stage of disease. I propose, in fact, to transfer a baneful and death-producing plant—the pathogenic fungus—from its congenial soil and climate in the tropics to the uncongenial soil and climate in the poles, and I confidently expect that, in its new situation, it will not long retain its power to do harm. I have practically applied this theory to the treatment of the influenza with the happiest results. In the epidemic of 1889 and 1890, I was face to face with an extreme case of this disease, when it was quite clear to me that something more than treatment upon general principles was necessary if I wished to save my patient. A process of reasoning, similar to what I have tried to explain, occurred to me at that time, and acting promptly on the indication to which it pointed, I artificially altered the prevailing state of the patient, with the result that the disease very speedily disappeared. I subsequently repeated my new line of treatment in hundreds of cases, with the same fortunate result. During the present epidemic (1891) I have pursued similar tactics with identically similar consequences. Let me briefly explain what has been occurring. I am called in to see a patient. I find him with a flushed, woe-begone face; intense frontal headache; increased temperature, at the same time perhaps that he is complaining of cold, or shivering; a quick pulse, great prostration, and unspeakable distress. I prescribe,

* Being the substance of the presidential address delivered to the members of the Border Counties Branch of the British Medical Association, at the annual meeting held at Maryport, July 16, 1891.—*London Lancet*.