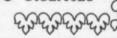
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## FOUL BROOD

BACTERIA AND THEIR RELATION TO DISEASES



are bacteria which secrete nicotine

We speak of bacteria as causing ınd. diseases, then, again, as preventing (but diseases, and sometimes as curing it I diseases. These opposite and appar-not utly irreconcilable properties in him objects that can only be seen in a ewis microscope, have caused the bacteria e. I so be looked upon as mythical bodies thick y many intelligent persons who ave not made them a special study. explanation of the ways in which ecteria act I propose adopting a ethod frequently used by lawyers efen court, i.e., of stating a case, and I esent the case of the boy learning smoke. If a boy takes five or six hiffs of smoke from a tobacco pipe, will in three or four minutes turn le and have to lie down. He will a very sick boy for half-an-hour en he will begin to recover, and an hour he will be nearly well ain. The nicotine poison in the acco acts quickly, and only for a nt time. If the boy had taken :ceive whiff the first day, two the sec-, and three the third, he could egone on for a month, and, withbeing sick, have made himself an invol tated smoker--likely enough ive ater d of his accomplishment. Men over. women have educated themselves ke with impunity a dose of opium orphine sufficient to kill a dozen ons, and men have been known that ke, without any immediate ill s, a quantity of arsenic sufficient l a score of men. They comwas ed by taking small quantities. will now suppose that there

poison as their weapon in the battle of life. The poisons secreted by the bacteria are very similar to the poisons formed in the leaves and flowers of plants, and in the bark of trees, to protect them from their enemies, so that the nicotine bacteria are not impossible bacteria.—they may exist. If the smoking boy and another boy not educated to smoke should be infected with these bacteria at the same time, no effects would be noticeable for several days, the period of incubation, say, ten days, when the bacteria would begin producing nicotine. The smoking boy would not be affected by it, while the other boy would be killed very quickly-probably in an hour. Now, if we had taken this boy before he died, taken him on the day he was infected, or the day after, and had given him a whiff of tobacco smoke, the next day two, and so on, until the bacteria commenced secreting nicotine, he might have been sick from the larger dose, but he would have recovered to find himself as accomplished a smoker as the other boy, the bacteria having completed his education.

We would have saved the boy precisely in the same way as a person bitten by a rabid dog is saved in the Pasteur Institution, and the smoking boy's protection from the nicotine bacteria shows how immunity from smallpox, by vaccination, may be produced at will. It should be observed that it makes no difference