

ligent and methodical," because after a provisional drying by means of sawdust, the carbon, vegetable or mineral, in powder, and the boracic acid, as well as the hermetical enclosing of the articles ; all this, with the charge of particulars, ought to be proceeded with by the public administration—the only authority which can realize it—by the formal cremation of these articles at two distinct times ; one of drying by a slow fire, and the other of definitive calcination ; all to be so executed that the fumes peculiar to ordinary combustion may not carry off, and scatter in the atmosphere, enormous quantities of unburned or incompletely burned microbes. I have been convinced by my experiments that, as a general rule, nothing short of complete "calcination" is a sufficient guarantee for the death of the microbes.

I cannot close this article without mentioning one very important experimental fact, the omission of which might suggest doubts, or even reflections, with some foundation. A good number of the substances used by me, when they are employed in the enormous doses mentioned, although they do not kill the microphytes, yet diminish, or altogether suspend their reproductive energy. For this purpose the only substance which, among those experimented with by me, offers practical conditions, is boracic acid. Borax, which is colorless, inodorous, and slightly acid, inoffensive to persons and things, giving an aqueous saturation at 4 per cent. in ordinary temperature, may be administered internally as "boracic lemonade" without any risk ; it is inassimilable or anhistogenous, and though like the other reagents, it does not kill the microbes, on the other hand, in supersaturated solution it restrains their reproduction better than the others. In order to demonstrate this, it suffices to hold under observance two equal quantities of the same culture ; one of them immediately supersaturated with boracic acid, and the other left without it ; let each of the vessels be closed with glass stoppers which will not altogether impede evaporation. On the fifth day afterwards the difference is amazing ; in the liquid supersaturated with boracic acid and having the surface covered with crystals of the same, the *bacilli* have changed for free *cocci*, or bundles of *cocci*, very lively and agile, but in quantity equal to the primitive or a little greater, whilst in the other vessel, for every free *coccus*, or bundle of *cocci* of the former, hundreds of *bacilli*

are moving about, with 4, 8, 16, and more nuclei.

This remarkable influence, however, whilst being of inestimable value for other conceptions, has no useful application in the problem of disinfections, either curative or preventive. In the first place, boracic acid produces such effects only in practical doses and conditions\* (economic, clinical and hygienic), by reason of its natural advantages above indicated. In the second place, every microphyte in passing from a favorable to an unfavorable medium, degenerates, and its fecundity is suspended or diminished, but in its turn it recovers its natural fecundity as soon as it passes from an adverse to a propitious medium.

Let us present a particular example of this sort of cycle of the *contagium vivum*. A person attends a cholera or a smallpox patient, out of his own house, etc. ; impregnates his hands with the *excreta* of the patient (the vomit, sweat, pus, crusts, etc). He afterwards washes his hands with boracic saturated water, and in so doing he inadvertently splashes the sleeve of his coat. On this sleeve there are microphytes, not only motionless from dryness, but also from the influence of the boracic acid (if any of it has reached them). This person returns to his own house ; his servant next day brushes the coat ; the microbes are mixed with the air of the house, and some of them get on the soap, or into the water which his daughter makes use of ; they are emancipated from the boracic acid, recover their forces on obtaining propitious liquids, in such favorable *climates* . . . and in a little time the daughter of this man falls sick, with cholera or smallpox.

It is a fact that things profit much by their names. Let Killing mean putting out of life ; the problem of disinfections is the problem of the death of the *contagium vivum*, and not of its mere attenuation, and for this reason the attenuating virtue of this or that substance will never solve the problem of either curative or preventive disinfection."

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It is stated (*Nouveaux Reivèdes*) that essence of pepperment painted on a burn will stop the pain at once.

\*This translation is literally exact, but there must be defect in the text.