

lent number of chlorine ions there has been added a substance, sodium chloride, which also dissociates giving more chlorine ions. Hence, for the same number of mercury ions there is now an excess of chlorine ions in the solution. The effect of this will be in the language of the physical chemist towards a "forcing back of the dissociation." Fewer mercury ions will be found in the solution and therefore one will expect a loss in toxic power.

That this is the case will be seen in the following table:

Bacillus Ant. (Spores).		Comparison HgCl ₂ 16 litres, 8 col.
Solution.		6 min.
1. HgCl ₂	16 litres	8
2. HgCl ₂ + NaCl	"	32
3. " + 2NaCl	"	124
4. " + 3NaCl	"	282
5. " + 4NaCl	"	382
6. " + 4.6NaCl	"	410
7. " + 6NaCl	"	803
8. " + 10NaCl	"	1087

As will be seen a solution of mercuric chloride at this dilution is 130 times more effectual than the same solution to which has been added 10 equivalents of sodium chloride.

As Paul and Krönig remarked, this is of very practical importance. In the German pharmacopœia the officinal antiseptic tablet is made up with 4.6 equivalents of sodium chloride; with this amount of sodium chloride the toxic action of the solution is markedly decreased. This is less so in solutions of greater dilution owing to the relative increase in the dissociation, but even in a dilution of 256 litres, that is to say approximately 1-1,000, the difference is quite apparent.

It is therefore well in increasing the solubility of an antiseptic to take into account the possible effect of the reagent added on the general toxic properties of the resulting solution. It is beyond the limits of this article to take up the highly important results of Kahlenberg and True who worked with lupines, (*Botanical Gazette*, 22, 81 [1896]), of Dreser on the effect of mercury solutions on fish, frogs, yeast, (*Archiv. f. Exp. Path. u. Phar.* XXXII., 456, [1893]), of Clark on moulds (*Journal Phys. Chem.*, II., 263, [1899]), or of Paul and Sarwey (*Münch Med. Woch.*, XII. [1901]) on the disinfection of hands. It is sufficient to say that the statement made by Behring (*Zeit. f. Hygiene*, IX., 400 [1890]), that the disinfecting power of solutions of mercury was entirely due to the amount of soluble mercury in the solution has been entirely disproven.