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EFFECTIVE DURATION OF SOME AGENTS USED FOR DENTIN STERILIZATION¹

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As far back as 1840, when the use of silver nitrate was first reported in dentistry (5), it seemed that some sort of chemical application to a carious cavity was desirable. With the advent of Miller's chemico-parasitic theory of tooth decay it became logical to assume that, since bacteria are at least invariably associated with dental caries, some effort should be made to eliminate them or control their growth in the cavity. Toward this end, many germicides and antiseptics have been advocated. Many have been discarded in favor of newer and more powerful drugs. A few, of which silver nitrate and phenol are notable examples, have been in favor through the years and are still in widespread use. The employment of cavity sterilization, however, is not universal. Many dentists do not subscribe to routine application of antiseptics to dentin, prior to the insertion of filling material. While in some cases this may be attributed to negligence in others, it results from doubt concerning the efficacy of such treatment.

The reasons given by those who doubt the need for cavity sterilization may be listed as follows: 1. Insertion of a filling which hermetically seals the dentin from further penetration of saliva is sufficient insurance against recurrence

caries. 2. Drugs which are powerful enough to kill all the bacteria in the dent are probably injurious to the pulp. 3. In deep cavities the pulp is probably already infected and it is only a question of time before root-canal therapy will be necessary.

The author has attempted to compare the efficiency of various medicaments used in cavity sterilization by *in vivo* experimentation (2). At first it appeared that some drugs were better than others for this purpose. The order of efficiency was as follows: 1. Morson's "Kreosote"; 2. 10 per cent aqueous solution of iodine;³ 3. Pure phenol; 4. Physiologic sodium chlorid solution; 5. Isotonic solution of iodine;⁴ 6. 50 per cent solution of thymol in 95 per cent ethyl alcohol; 7. 50 per cent solution of phenol in 95 per cent ethyl alcohol; 8. Howe's ammoniacal silver nitrate; 9. 95 per cent alcohol.

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² Now on active duty with the U. S. Army (D. C.).

³ Iodin.....	10 gms.
Pot. Iodid.....	20 gms.
Water.....	100 cc.
⁴ Iodin.....	1.58 gms.
Pot. Iodid.....	2.53 gms.
Water.....	100 cc.

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